IMPORTANT BIRD AND BIODIVERSITY AREAS IN INDIA

Priority sites for Conservation

Revised and updated 2nd Edition Vol. II

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Second Edition: Revised and Updated

Volume II

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NAGALAND

More than 80 percent forest land is under village councils, but there are some very good protected areas in Nagaland such as the Fakim Wildlife Sanctuary

Nagaland (25° 10'–27° 01' N and 93° 17'–95° 15' E) is located in the extreme northeast of India and has a geographical area of 16,57,900 ha (0.5% of India's geographical area). The State consists of a narrow strip of hilly area running from the northeast to the southwest, which is located in the northern extension of the Arakan Yoma Ranges of Myanmar. It is bounded on the south by Manipur, by Assam on the west and north, and on the northeast by Arunachal Pradesh. The altitude varies from 194 msl to 3,841 msl. Saramati, the highest peak is 3,841 msl high and Kohima, the capital, is 1,444 metres above sea level.

About 90% of the Nagaland population is tribal. There are many tribes and sub-tribes having distinct languages and cultural features. Kohima district is home to the Angamis, Zeliangs, Rengmas, Kukis, Semas and other minor groups. Mokokchung is home to the Aos and Wokha district to the Semas. Chang, Sangtam, Khemnungan, Yimchunger and Phom are found in Tuensang district. Nagaland is sometimes described as a conglomeration of 'Village Republics'.

Nagaland State comprises the former Naga Hills district of Assam and the former Tuensang frontier division of the North-East Frontier Agency. Nagaland was declared as a State on 1st December 1963.

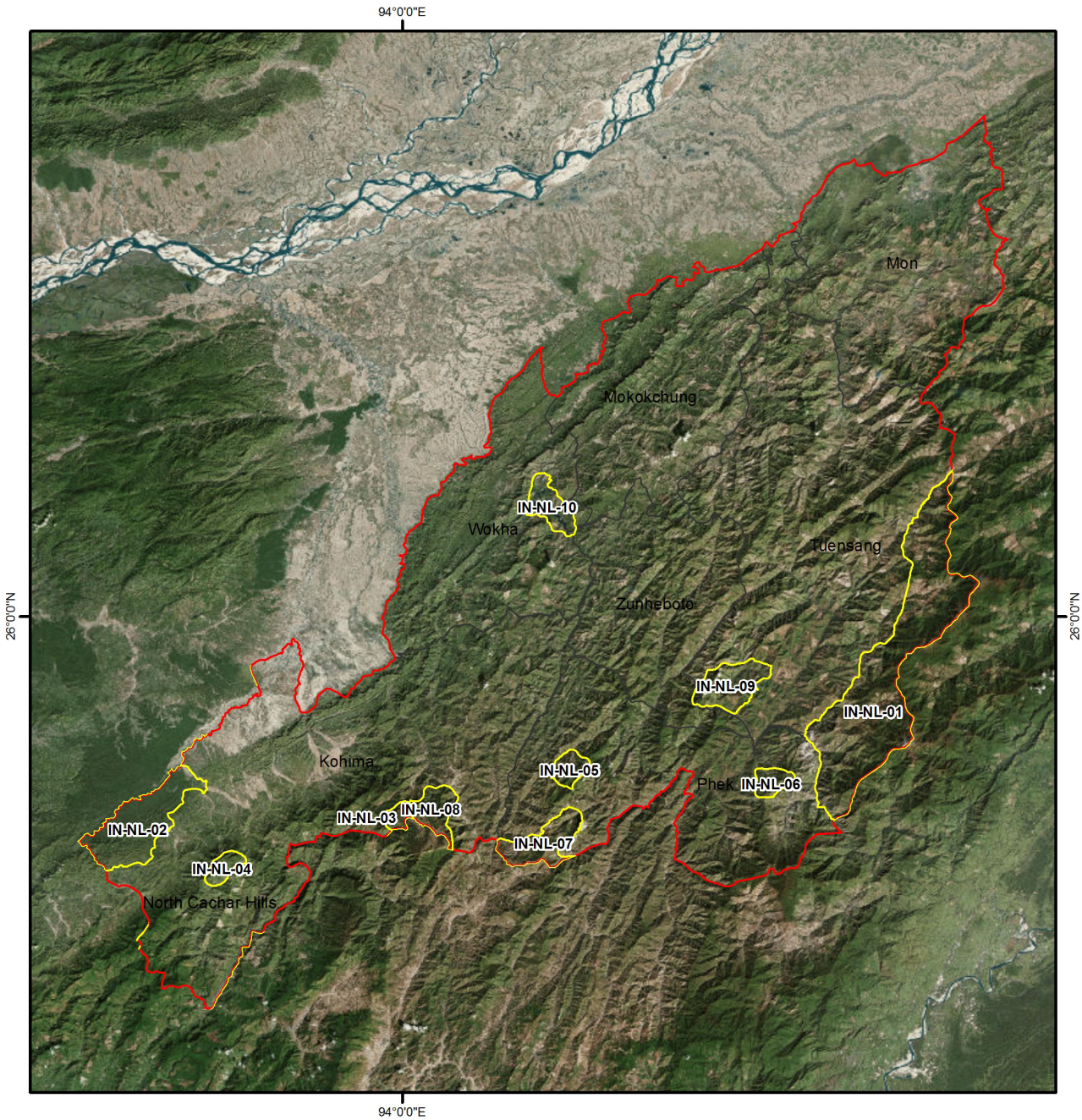
The climate of Nagaland is tropical 'monsoon' type with a hot wet summer and a cool dry winter (Choudhury 2001). Winter rains are not uncommon. The annual rainfall varies from 1,000 mm in the southwest to 6,000 mm in the north. The temperature generally ranges from less than 0 °C to 35 °C.

The total human population of Nagaland is 19,80,602 which is 0.2 of the country's population (2011 Census). The rural population is 82.3% and urban, 17.7%. The tribal population constitutes 88% of the total population. As per the 2011 Census, the average population density of the state is 119 persons per sq. km. The livestock population of Nagaland is 1.07 million.

Vegetation

As per the Forest Survey of India report of 2013, the forest types in the State are Tropical Wet Evergreen, Tropical Moist Deciduous, Montane Wet Temperate, and Subtropical Pine Forests. The recorded forest area in Nagaland is 8,94,700 sq. km , which is 52% of the geographical area of the state and 1.70% of India's forest area (Ministry of Environment and Forest 2011). About 88.36% of the recorded forest area is under private control and the rest under the State Government. Reserved, Protected and unclassed forests

Important Bird Areas in Nagaland



DHRITIMAN MUKHERJEE

Mount Paona was declared as Community Conserved Area by the people of Benrue village

(community) constitute 3.6%, 5.9% and 90% of the forest area respectively.

As per the Forest Survey of India report of 2013, there has been an overall increase of 13,416 sq. km of dense forest because of the improvement of 1,47,500 ha of open forest, 400 ha of scrub and 17,500 ha of non-forest.

Tropical Wet Evergreen Forest occurs in patches in the lower and middle elevations all over the state, except in the southwest where Tropical Moist Deciduous and Semi-evergreen Forests dominate. Many of the river valleys and gorges are covered with Evergreen Forest. The Tropical Semi-evergreen Forest also occurs in many of the once Evergreen pockets (Choudhury 2001). On the higher hills, especially the Barails, Satoi, Mount Japfu and on the slopes of Mount Saramati, Subtropical Broadleaf Forest occurs with small areas of Conifers in the eastern parts. Further, higher up on Saramati, Temperate Broadleaf Forest is found, while on Mount Saramati, the vegetation is Sub-alpine (Choudhury 2001). There is no large grassland in Nagaland; however, small patches occur in sheltered valleys and along the rivers. In the abandoned *jhum* (shifting cultivation), grasses appear till they are replaced by shrubs and trees.

IBAs AND PROTECTED AREAS

Nagaland has one national park and three wildlife sanctuaries. The total geographical area under the protected area network is 22,643 ha, constituting only 1.37% of the geographical area. In 2004, nine IBAs were recognized by BNHS and BirdLife International (Islam and Rahmani 2004). To this list one more has been added, the Doyong Reservoir area. Most of the non-protected IBAs are community conserved areas.

AVIFAUNA

Nagaland has potential habitats for some of the globally threatened species. An annotated checklist of the birds of Nagaland prepared by Choudhury (2001) records 487 species. The first published study on birds of Nagaland was by Godwin-Austen (1872–1878), followed by Coltart (1902), McCann (1931, 1933) and Hutchinson (1946). Koelz (1951, 1952, 1953, 1954) and Ripley (1951, 1952, 1953) simultaneously published their ornithological works on Nagaland. More recently, Choudhury (1996, 1997, 2001, 2003 and 2006) has published some interesting records. His annotated list includes nine Threatened species, five Near Threatened and eight restricted range species. Of the total

487 species recorded in Nagaland, 133 have been reported for the first time by Choudhury (2001).

Bikram Grewal (2010) compiled all available information on Nagaland birds and listed 503 species, excluding 21 species for which he could not trace confirmed records. During four birding trips in 2010, Bikram Grewal, Sumit Sen, Ramki Sreenivasan and Shashank Dalvi saw 167 birds, a few of them being sold in markets (see special issue of *Indian BIRDS* 6(2) 2010).

Nagaland is very important for the survival of the Blyth's Tragopan and perhaps also for the Dark-rumped or Khasi Hills Swift. Among the Near Threatened species, Nagaland still has habitat for the Lesser Fish-eagle *Ichthyophaga humilis*, Austen's Brown Hornbill *Anorrhinus austeni* (extensively hunted) and Yellow-rumped Honeyguide *Indicator xanthonotus*.

SOME GLOBALLY THREATENED SPECIES RECORDED IN NAGALAND

White-bellied Heron *Ardea insignis*
Critically Endangered

A specimen was collected, perhaps from the Dikhou river (Abdulali 1968) but Choudhury (2001) could not find any recent evidence of its occurrence in Nagaland.

White-winged Duck *Asarcornis scutulata*
Endangered

Hume and Oates (1889–90) and Hutchinson (1946) have reported it from the Rangapahar Reserve Forest and adjacent lowland forests near Dimapur. Choudhury (2001) got evidence of its continued existence from the Intanki National Park. It could be surviving in Phek and Tuensang districts also.

Manipur Bush-quail *Perdicula manipurensis*
Endangered

Nagaland was included in its distribution but there is no recent record (Choudhury 2001).

Blyth's Tragopan *Tragopan blythii*
Vulnerable

This is the state bird of Nagaland. It is found usually above 1,800 msl. It has been reported from Fakim WLS (Zeliang 1980, Choudhury 1997); Khonoma, Barail Range (Ripley 1952); Puliebadze WLS (Zeliang 1980, Choudhury 1997)

IBAs of NAGALAND

IBA site codes	IBA site names	IBA criteria
IN-NL-01	Fakim Wildlife Sanctuary and Saramati Area	A1, A2
IN-NL-02	Intanki National Park	A1, A3, A4iv
IN-NL-03	Khonoma Nature Conservation and Tragopan Sanctuary	A1, A2
IN-NL-04	Mount Paona	A1, A2
IN-NL-05	Mount Zanibu	A1, A2
IN-NL-06	Mount Ziphu	A1, A2
IN-NL-07	Pfutsero-Chizami	A1, A2
IN-NL-08	Pulie Badze Wildlife Sanctuary	A1, A2
IN-NL-09	Satoi Range	A1, A2
IN-NL-10	Doyang Reservoir and Pangti Forest	A4 iv

LIST OF THREATENED AND NEAR THREATENED BIRD SPECIES WITH IBA SITE CODES

ENDANGERED		
White-winged Duck	*Asarcornis scutulata*	IN-NL-02
VULNERABLE		
Blyth's Tragopan	*Tragopan blythii*	IN-NL-01, 03, 04, 05, 06, 07, 08, 09
Wood Snipe	*Gallinago nemoricola*	IN-NL-06
Pale-capped Pigeon	*Columba punicea*	IN-NL-05
Dark-rumped Swift	*Apus acuticauda*	IN-NL-03, 08
Rufous-necked Hornbill	*Aceros nipalensis*	IN-NL-01, 02, 04, 05, 06, 09
Grey-sided Thrush	*Turdus feae*	IN-NL-03
NEAR THREATENED		
Mrs. Hume's Pheasant	*Syrmaticus humiae*	IN-NL-01, 05, 06, 07, 09
Great Pied Hornbill	*Buceros bicornis*	IN-NL-02, 04, 05
White-throated Brown Hornbill	*Anorrhinus austeni*	IN-NL-02, 04
Yellow-rumped Honeyguide	*Indicator xanthonotus*	IN-NL-03
Blackish-breasted Babbler	*Sphenocichla humei*	IN-NL-03, 06, 08
Chevron-breasted Babbler	*Sphenocichla roberti*	IN-NL-03
Long-tailed Wren-babbler	*Spelaeornis chocolatinus*	IN-NL-01, 03, 04

ASHISH KOTHARI

Thanks to conservation awareness, more and more village councils are coming forward to declare their forests as Community Conserved Areas

and Pfutsero (Choudhury 1997). It is still not uncommon in some areas such as Satoi, Mount Japfu, Dzuko Valley, Fakim Sanctuary, Puliebadze Sanctuary, Mount Paona, Noklak and Saramati areas of Tuensang district and the entire Barail Range in Kohima district (Choudhury 2001).

Mrs. Hume's Pheasant *Syrmaticus humiae*
Vulnerable

Baker (1922–1930) reported it from Nagaland but recently Choudhury (2001) could not find confirm its occurrence in the Barail Range, but many records from Phek Kiphire and Tuensang districts.

Wood Snipe *Gallinago nemoricola*
Vulnerable

This species has been reported from Mount Ziphu (= Zefu) (Choudhury 2003).

Pale-capped Pigeon *Columba punicea*
Vulnerable

It was recorded 50 years ago by Ripley (1952) but due to extensive hunting it is probably extinct in the state. Choudhury (2001) could not see or record any dead bird in the Kohima market where wild meat is still sometimes sold.

ENDEMIC BIRD AREA 130: EASTERN HIMALAYAS		
Blyth's Tragopan	*Tragopan blythii*	IN-NL-01, 03, 04, 05, 06, 07, 08, 09
Striped Laughingthrush	*Trochalopteron virgatum*	IN-NL-08,
Brown-capped Laughingthrush	*Ianthocincla austeni*	IN-NL-08,
Sikkim Wedge-billed Babbler	*Sphenocichla humei*	IN-NL-06, 08
Dark-rumped Swift	*Apus acuticauda*	IN-NL-03,
Streak-throated Barwing	*Ixops waldeni*	IN-NL-04, 05, 06, 08,
White-naped Yuhina	*Yuhina bakeri*	IN-NL-03, 04, 05, 06, 07, 08
Beautiful Sibia	*Heterophasia pulchella*	IN-NL-04, 06, 07,
Grey Sibia	*Heterophasia gracilis*	IN-NL-01, 02, 03, 04, 05, 06, 07, 08, 09

Dark-rumped or Khasi Hills Swift
Apus acuticauda
Vulnerable

During a survey sponsored by the IBCN, this swift was reported for the first time in Nagaland from the Puliebadze and Khonoma areas (Ahmed *et al.* 2003).

Rufous-necked Hornbill *Aceros nipalensis*
Vulnerable

Like other hornbill species, this species is also extensively hunted in Nagaland for its casque. Therefore it has become extremely rare, if not already extinct in the state. It is surviving in small numbers in the Barail Range, Saramati-Fakim area and in the southern parts of the Intanki National Park (Choudhury 2001).

Restricted Range species

Nagaland has habitats for many restricted range species of the Endemic Bird Area of the Eastern Himalaya (EBA 130), which include Subtropical Hill, Temperate, and Sub-alpine Forests. The key threats to these areas and the species are moderate habitat loss (e.g., due to logging, agriculture, overgrazing) and hunting (Stattersfield *et al.* 1998).

Biomes

Nagaland shows vegetation, rainfall, habitat and altitudinal variations. It encompasses three biomes. Biome 9 (Indo-Chinese Tropical Moist Forest) is found below *c.* 1,000 msl, with its lowland Evergreen Rainforest, Semi-evergreen Rainforest and Moist Deciduous Forest. BirdLife International (undated) has listed 19 species as representative of this biome . Many are found in Nagaland. Biome 8 (Sino-Himalayan Subtropical Forest) is found above 1,000 and below 2,000 msl, with 95 bird species. The Lower Montane Rainforests, Pine and Hill Evergreen Forests are found in this biome. Biome 7 (Sino-Himalayan Temperate Forest) between 1,800 msl and 3,600 msl, has Broadleaf Evergreen, Broadleaf Deciduous, Mixed Broadleaf-coniferous and Coniferous Forests, and Montane Grassland. This biome has 112 species, and many are found in Nagaland. A total of 226 species are listed in the three biomes. Based on the check-lists available with IBCN, till now 114 biome species have been identified in Nagaland. Forty-four out of 112 of Biome 7, 63 out of 95 species of Biome 8, and seven out of 19 species of Biome 9 have been sighted.

THREATS AND CONSERVATION ISSUES

There are many areas in Nagaland which are not yet suitably explored for birds and other biodiversity,

DHRITIMAN MUKHERJEE

Slash-and-burn, locally called *jhumming*, method of cultivation was fine as long as the interval was long that allowed forest to regenerate, but with increasing human population pressure, short intervals of *jhumming* have created many ecological and social problems

DHRITIMAN MUKHERJEE

DHRITIMAN MUKHERJEE

Thanks to the cooperation of villagers, environmental awareness by NGOs and strict action by the Forest Department of Nagaland, there has been practically zero hunting of Amur Falcons in and around Pangti, Doyang and other villages since 2013 (left). Such environmental awareness is required all over the state to stop all types of hunting. In many areas, birds and other wildlife are still openly sold on roadside (right) and in villages

especially areas which border Myanmar. For example, Fakim-Saramati, within the Saramati Hill Range, is a large tract of forest bordering Myanmar. The entire range has not been fully explored yet and likely habours many important species of Indo-Malayan origin, including the Sumatran Rhinoceros. The area is not accessible by road, so it is protected naturally.

Many areas are not yet explored because they are not easily accessible and also due to the presence of extremists. For example, Intanki National Park is adjacent to Dhansiri Reserve Forest in Assam. While Dhansiri has already become an Elephant Reserve, Intanki is still at the 'proposed' stage. There has been some encroachment and illegal logging activity in the Park. Due to the alleged presence of extremists in the Park, the movement of government officials is restricted. There is now an urgent need to collect baseline information in areas such as Satoi, Saramati, Intanki, Fakim and Dzukou Valley (Choudhury 2001). The current status of the globally threatened species such as Manipur Bush-quail, White-bellied Heron, White-winged Duck and Pale-capped Pigeon in Nagaland is not known.

Jhum cultivation, felling of trees and poaching, including trapping of galliformes, are the main conservation issues in most of the IBAs. However, Blyth's Tragopan, the state bird of Nagaland, is not killed deliberately in most cases.

DHRITIMAN MUKHERJEE

Government is promoting terrace cultivation which according to some is less harmful than *jhumming*

ASHISH KOTHARI

ASHISH KOTHARI

Establishment of Khonoma Nature Conservation and Tragopan Sanctuary in 1998 by villagers and its continued protection gives hope that through public participation, future of conservation is bright in Nagaland. There are many good examples of conservation initiatives by local people.

As per the Forest Survey of India report of 2013, there are 1,454 villages in Nagaland, of which 669 have forest as land use. The total forest area in these villages is 0.49 million ha and the population of these villages is 0.53 million. The villages having less than 100 ha, between 100–500 ha and more than 500 ha forests constitute 53 %, 27% and 20% of the total villages, respectively (Ministry of Environment and Forest 2013).

According to Choudhury (2001), the main threat faced by the forest birds is destruction of habitat owing to felling of trees and *jhum* cultivation. Besides, most wild animals are threatened by poaching; they are considered edible by the tribal groups and are regularly shot using guns, trapped or killed by slingshot. But, the commercial sale of birds in the local markets is the most serious threat. For small cryptic and nocturnal birds, however, hunting does not represent a serious threat as their habitat is still intact in many parts of Nagaland.

The existing protected area network in Nagaland is inadequate for the long-term protection of all wildlife, including birds. The protected area covers only 1.37% of the geographical area of the State. Moreover, protection measures are not in place. Formation of new and larger protected areas such as Saramati-Fakim (50,000 ha), Satoi (10,000 ha), Barails (20,000 ha) and Mount Ziphu (5,000 ha), adequate protection of the existing areas, and development of community conservation reserves are recommended. For a start, all the IBAs should be given legal protection. Establishment of NGOs such as the People's Group of Nagaland, with emphasis on environmental protection is a positive development. As 93% of the forest belongs to the village council, nothing can be achieved without the cooperation of the villagers. As Christianity is the major religion in Nagaland, Jesuit schools can play a major role in environment education. With 71% literacy, spreading the message of environment protection is not difficult.

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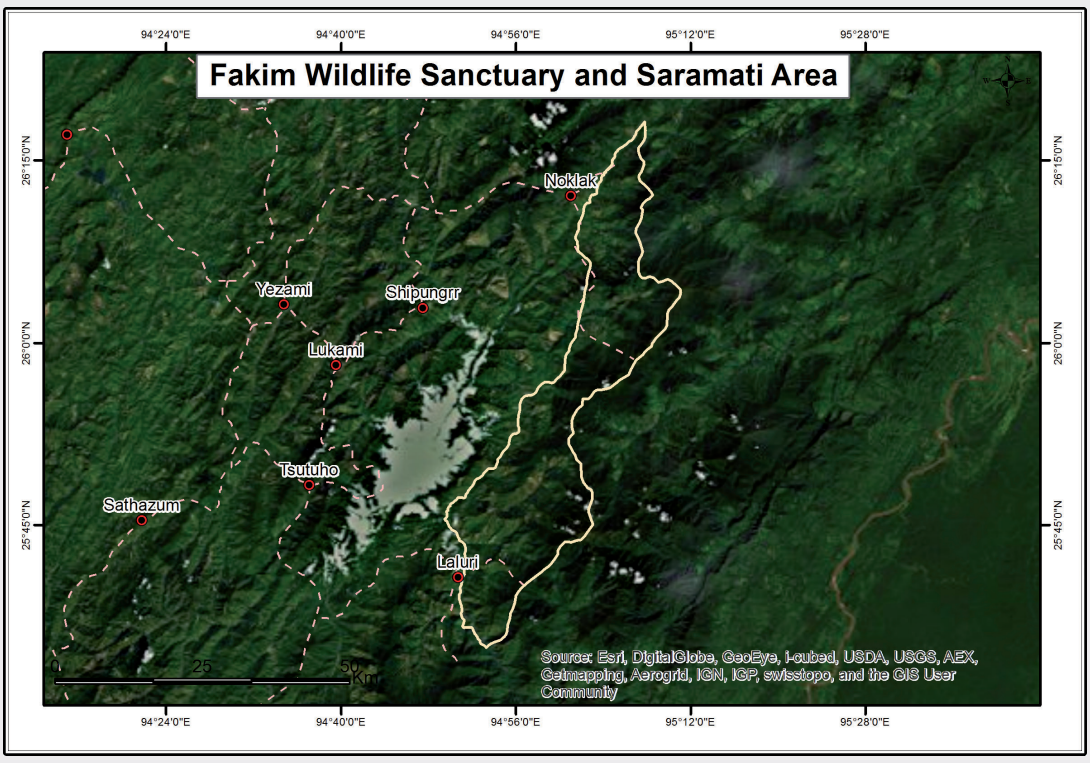
FAKIM WILDLIFE SANCTUARY AND SARAMATI AREA

IBA Site Code	:	IN-NL-01	**Area**	:	30,000 ha
Administrative Region (State)	:	Nagaland	**Altitude**	:	2,000–3,842 msl
District	:	Kiphire	**Rainfall**	:	>2,000 mm
Coordinates	:	25° 48' 50" N, 94° 57' 21" E	**Temperature**	:	5 °C to 25 °C
			Biogeographic Zone	:	Northeast
Ownership	:	Community, State	**Habitats**	:	Montane Wet Temperate Forest

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 130: Eastern Himalaya) Data Deficient

PROTECTION STATUS : Wildlife Sanctuary, established 1980.



GENERAL DESCRIPTION

Fakim Wildlife Sanctuary is situated on the slopes of Saramati mountain (3,482 msl), which is the highest peak in Nagaland. Fakim-Saramati is *c.* 30 km from the nearest township Pungro, which was earlier in Kiphire subdivision of Tuensang district, before Kiphire became a district. Fakim means "surrounded by salt lick pool". As the name indicates, there are as many as 50 salt lick pools in and around this sanctuary. Fakim WLS was constituted for the protection of Blyth's Tragopan *Tragopan blythii*. The topography of the whole sanctuary is montane, with pristine forest. Several nullahs and streams intersect the area. The Saramati range is on the Indo-Myanmar international boundary and is an extensive wilderness with excellent subtropical and temperate forest (Choudhury 2002). Fakim WLS is quite small (642 ha) and a part of Saramati mountain range, therefore we have included both in a single IBA, of nearly 30,000 ha. Saramati is contiguous with similar forested region in Myanmar.

The area is covered with thick virgin primary forest of temperate broadleaf to subalpine forest types (Champion & Seth 1968). Rongsensashi *et al.* (2013) recorded 173 species of medicinal plants from this IBA. These include *Amphineuron opulentum* which is used as antiseptic and its fronds as an insect repellent; *Aristolochia cathcartii*, a stomachic and antidote for snakebite and insect stings; *Artemisia indica* which is used to treat asthma, fever, bronchitis, diarrhoea, skin diseases, and rheumatism; and *Asplenium nidus*

whose shoots are used for sores and ulcers, and leaf paste as antiparasitic against lice.

AVIFAUNA

Fakim WLS and Saramati Hills bear some remnants of the pristine forests of Nagaland. Being remote and inaccessible, these areas have not been explored by scientists, and very little information is available on the avifauna. This is one of the IBA sites where Mrs. Hume's Pheasant *Syrmaticus humiae* is found in India, probably in low numbers due to dense primary forest (Choudhury 2001, 2002). It is widely distributed in the hills of southern and eastern Nagaland (Choudhury 2002). Blyth's Tragopan *Tragopan blythii* is common in this IBA (Choudhury 2001). Rufous-necked Hornbill *Aceros nipalensis*, a globally Threatened species considered as Vulnerable by BirdLife International (2001, 2014), is also found in small numbers (A. Choudhury, *pers. comm*. 2003).

GAME- BIRDS OF INDIA/BURMA & CEYLON/VOL. III/STUART BAKER

Mrs. Hume's Pheasant *Syrmaticus humiae* if found in low numbers. As it is extensively hunted in Nagaland, Fakim Wildlife Sanctuary is one of few sites where it is relatively protected

VULNERABLE	
Blyth's Tragopan	*Tragopan blythii*
Rufous-necked Hornbill	*Aceros nipalensis*
NEAR THREATENED	
Mrs. Hume's Pheasant	*Syrmaticus humiae*
Naga Wren-babbler	*Spelaeornis chocolatinus*
ENDEMIC BIRD AREA 130: EASTERN HIMALAYA	
Blyth's Tragopan	*Tragopan blythii*
Grey Sibia	*Heterophasia gracilis*
BIOME 08: SINO HIMALAYAN SUBTROPICAL FOREST	
Bay Woodpecker	*Blythipicus pyrrhotis*
Yellow-throated Laughingthrush	*Garrulax galbanus*
Spot-breasted Laughingthrush	*Garrulax merulinus*
White-browed Laughingthrush	*Garrulax sannio*
Spot-breasted Parrotbill	*Paradoxornis guttaticollis*
Striated Prinia	*Prinia criniger*
Slender-billed Oriole	*Oriolus tenuirostris*
Maroon Oriole	*Oriolus traillii*
Collared Treepie	*Dendrocitta frontalis*

Fakim-Saramati is part of the Eastern Himalaya Endemic Bird Area (EBA 130). Analysis by BirdLife International has shown that a very high proportion of the world's endemic birds occur in a small proportion of the land area. EBAs are important hotspots for the conservation of bird diversity. Fakim-Saramati and other IBAs in the Northeast are such hotspots. Choudhury (2001) identified 487 species of birds from the whole of Nagaland.

During a recent survey in October 2014 by the BNHS IBA team, to study Amur Falcon *Falco amurensis* and other birds, the following were seen at this site: Manipur Fulvetta *Fulvetta manipurensis*, Common Hill-partridge *Arborophila torqueola*, White-tailed Nuthatch *Sitta himalayensis*, Yellow-bellied Fantail *Chelidorhynx hypoxantha*, Mrs. Gould's Sunbird *Aethopyga gouldiae*, Stripe-throated Yuhina *Yuhina gularis*, Scarlet Minivet *Pericrocotus flammeus*, Crimson-breasted Woodpecker *Dendrocopus cathpharius*, Hill Prinia *Prinia superciliaris*, Spot-breasted Parrotbill *Paradoxornis guttaticollis*.

Due to its altitudinal variation from 2,000 to 3,842 m, Fakim-Saramati lies in two biomes – Biome 7 (Sino-Himalayan Temperate Forest, *c.* 1,800–3,600 m) and Biome 8 (Sino-Himalayan Subtropical Forest, 1,000–2,000 m). A total of 207 species of birds are listed in these biomes. Many of these are listed by Choudhury (2001) in his Nagaland checklist, but we do not know how many occur in Fakim-Saramati WLS. This site has been included as a potential IBA, and further studies on the birdlife are required.

OTHER KEY FAUNA

Sumatran Rhinoceros *Dicerorhinus sumatrensis* was recorded in the past (Choudhury 1997). Presently, the

felines recorded are Tiger *Panthera tigris*, Leopard *P. pardus*, Clouded Leopard *Neofelis nebulosa*, and Asian Golden Cat *Catopuma temmincki*. Primates are represented by the Assamese Macaque *Macaca assamensis*, Rhesus Macaque *M. mulatta*, Stump-tailed Macaque *M. arctoides*, Northern Pig-tailed Macaque *Macaca leonina*, Capped Langur *Trachypithecus pileatus*, Hoolock Gibbon *Hoolock hoolock*, and Slow Loris *Nycticebus bengalensis*. Wild Dog *Cuon alpinus* and Asiatic Black Bear *Ursus thibetanus* are also reported. Sethy & Chauhan (2012) also reported presence of Sun Bear *Helarctos malayanus* from this IBA. Wild Boar *Sus scrofa*, Sambar *Rusa unicolor*, Barking Deer *Muntiacus muntjak*, Gaur *Bos gaurus*, Long-tailed Goral *Naemorhedus griseus*, and Himalayan Serow *Capricornis thar* are the major ungulates. Choudhury (2006) mentions that the population of Hoolock Gibbon in this sanctuary is estimated between 20 and 50. Sreenivasan & Dalvi (2010) sighted a Bella Rat Snake *Maculophis bella* close to Fakim WLS, which turned out to be new species for India, as it was known only from northern Myanmar and western Yunnan province, China. Except for this, there is no published record of the reptiles and amphibians of this area.

In the spring of 2014, the rare swallowtail butterfly Bhutan Glory *Bhutanitis lidderdalii* was seen 17 times in this IBA. (Kamdi Hemant Bhaskar *pers. comm.* 2014).

LAND USE

- Forest
- *Jhum* cultivation

THREATS AND CONSERVATION ISSUES

- Hunting

Fakim-Saramati, within the Saramati range, is a large tract of forest bordering Myanmar. The entire range has not been fully explored yet and it is a likely habitat for many important species of Indo-Malayan origin, including the Sumatran Rhino. The area is not accessible by road, so it is protected naturally. Hunting by tribals is the main threat.

KEY CONTRIBUTORS

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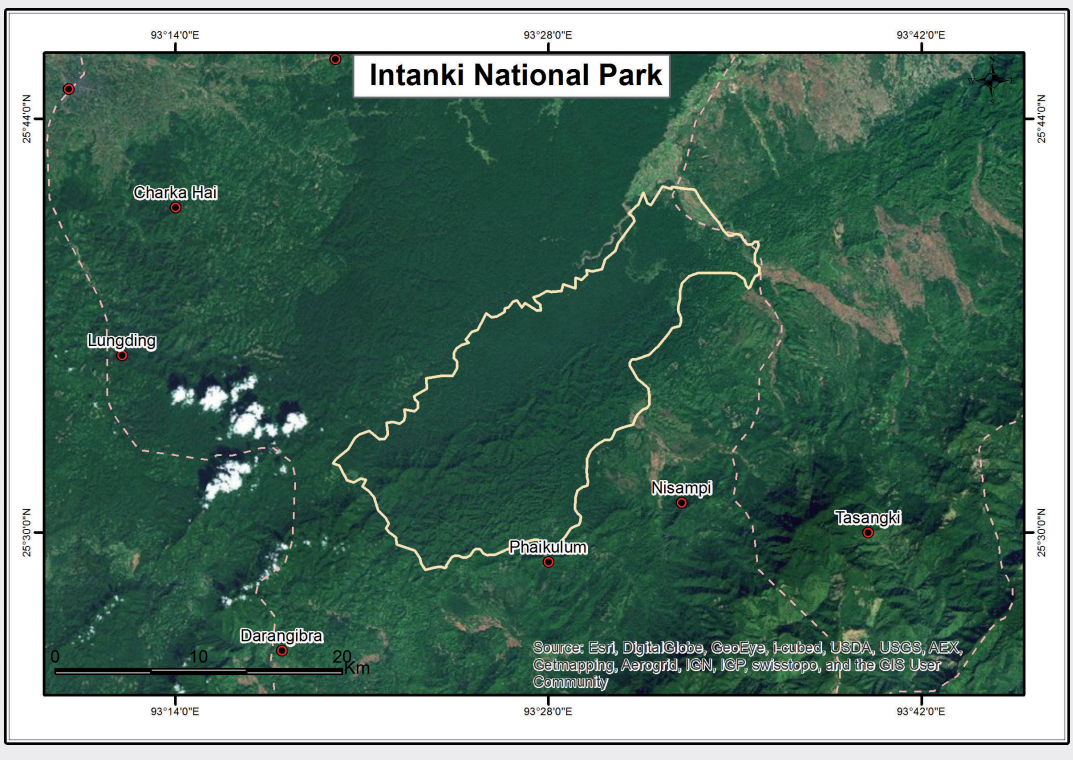
INTANKI NATIONAL PARK

IBA Site Code	:	IN-NL-02	**Altitude**	:	100–1,000 msl
Administrative Region (State)	:	Nagaland	**Rainfall**	:	900–1,700 mm
District	:	Peren	**Temperature**	:	6 °C to 32 °C
Coordinates	:	25° 34' 57" N, 93° 26' 29" E	**Biogeographic Zone**	:	Northeast
Ownership	:	State	**Habitats**	:	Tropical Semi-evergreen Forest, Tropical Dry Deciduous Forest, Tropical Moist Deciduous Forest
Area	:	20,202 ha			

IBA CRITERIA : A1 (Threatened species), A3 (Biome 8: Sino-Himalayan Subtropical Forest, Biome 9: Indo-Chinese Tropical Moist Forest), A4iv (Site known or thought to exceed thresholds set for migratory species at bottleneck sites)

PROTECTION STATUS : Wildlife Sanctuary, declared 1975; National Park, established 1995.



GENERAL DESCRIPTION

Intanki was declared as a Reserve Forest on May 7, 1923, and adjoining forest patches were added on July 18, 1927. However, the first working plan was implemented as late as 1963–1964. Earlier, selective felling was carried out between Monglu and Intanki rivers. But in 1975, when the area was declared a sanctuary, this was stopped. Thereafter, more forest roads, artificial salt licks, and camps for protection were created. In 1995, the Government of Nagaland upgraded it to a National Park.

The northern part of Intanki is a low rainfall zone of the Northeast. Intanki is contiguous with Dhansiri Reserve Forest of Karbi Anglong (Assam) to the north. The Dhansiri river marks the boundary between these two areas. Many rivers and streams intersect the Intanki NP, among them Monglu, Intanki, and Duilong are the major tributaries of Dhansiri river. The terrain is undulating and hilly, with bamboo groves. The Range Office is located *c.* 40 km from Dimapur. The forest cover is Tropical Semi-evergreen and Deciduous type.

AVIFAUNA

During a recent survey by the BNHS IBA team on November 11, 2014, more than 50,000 Amur Falcon *Falco*

amurensis were estimated near Junction Camp (25° 40' 57" N, 93° 31' 11" E) in this IBA. Thus, Intanki easily qualifies for A4iv criteria (Congregations). A4iv is applicable to sites known or thought to exceed the thresholds set for migratory species at bottleneck sites. Intanki NP is the bottleneck site for feeding and resting of more than a million Amur Falcon *Falco amurensis* during their migration.

Very little is known about the avifauna of the Intanki area, but many biome species were recorded from the adjacent Dhansiri Reserve Forest (Choudhury 1998). These species are likely to be present in Intanki area also. Among the threatened species, White-winged Duck *Cairina scutulata* is found here. Choudhury (2001) mentioned that local hunters claim to have seen it two or three times in jungle pools in 1990–1991. There are past records from Rangapahar Reserve Forest and the adjacent lowland forests near Dimapur (Hume 1890, Hutchinson 1946). Due to the presence of 14 villages and many settlements, Rangapahar RF is under tremendous biotic pressure.

The Rufous-necked Hornbill *Aceros nipalensis* is also found, but its population density is unknown (Choudhury 2001). Oriental Pied Hornbill *Anthracoceros albirostris*, once common all over Nagaland, now survives in protected areas such as Intanki. Similarly, Austen's Brown Hornbill *Anorrhinus austeni*, a Near Threatened species (BirdLife International 2001) also survives in Intanki NP and Dhansiri Reserve Forest (Choudhury 2001). Perhaps the worst fate is that of the Great Pied Hornbill *Buceros bicornis*. Once common all over Nagaland, it is now extremely rare, mostly due to persecution for food as well as its feathers (primaries and tail), which are in great demand for use in

ENDANGERED	
White-winged Duck	*Cairina scutulata*
VULNERABLE	
Rufous-necked Hornbill	*Aceros nipalensis*
NEAR THREATENED	
Great Pied Hornbill	*Buceros bicornis*
Austen's Brown Hornbill	*Anorrhinus austeni*
ENDEMIC BIRD AREA 130: EASTERN HIMALAYA	
Grey Sibia	*Heterophasia gracilis*
BIOME 8: SINO-HIMALAYAN SUBTROPICAL FOREST	
Austen's Brown Hornbill	*Anorrhinus austeni*
Golden-throated Barbet	*Megalaima franklinii*
Blue-throated Barbet	*Megalaima asiatica*
Bay Woodpecker	*Blythipicus pyrrhotis*
White-throated Bulbul	*Alophoixus flaveolus*
Maroon Oriole	*Oriolus traillii*
Grey Treepie	*Dendrocitta formosae*
BIOME 9: INDO-CHINESE TROPICAL MOIST FOREST	
Grey Peacock-pheasant	*Polyplectron bicalcaratum*
Pale-headed Woodpecker	*Gecinulus grantia*

DHRITIMAN MUKHERJEE

During a survey by the BNHS IBA team on November 11, 2014, more than 50,000 Amur Falcon *Falco amurensis* were estimated at one spot in this National Park

DHRITIMAN MUKHERJEE

Detailed survey is required to know how many Amur Falcons pass through Itanki NP every year

traditional headdresses. It is locally extinct in most places, and the only notable population is found in Intanki NP (Choudhury 2001).

Intanki site lies in the Eastern Himalaya Endemic Bird Area (EBA 130). Among the restricted-range species, only Grey Sibia *Heterophasia gracilis* is identified, but more are likely to be found.

Intanki is located in Biome 9 (Indo-Chinese Tropical Moist Forest), but some species of Biome 7 (Sino-Himalayan Temperate Forest) and Biome 8 (Sino-Himalayan Subtropical Forest) are also found, especially in winter. For example, Rufous-bellied Niltava *Niltava sundara* of Biome 7 is reported from this IBA (A.U. Choudhury, *pers. comm.* 2003).

Intanki is one of the hotspots of bird conservation in northeast India, but detailed work has not been done here, therefore, we consider it as Data Deficient. Choudhury (2001) identified 487 species of birds from Nagaland. A bird checklist of Intanki is not available, but many of the species listed by Choudhury (2001) are likely to occur, especially those of Biome 8 and Biome 9, as listed in the Table.

OTHER KEY FAUNA

Intanki NP has almost all the large mammals of Nagaland, such as the Asiatic Elephant *Elephas maximus*, Tiger *Panthera tigris*, Leopard *P. pardus*, Clouded Leopard *Neofelis nebulosa*, Asian Golden Cat *Catopuma temmincki*, Marbled Cat *Pardofelis marmorata*, Wild Dog *Cuon alpinus*, Asiatic Black Bear *Ursus thibetanus*, Gaur *Bos gaurus*, Wild Boar *Sus scrofa*, Sambar *Rusa unicolor*, Barking Deer *Muntiacus muntjak*, and Himalayan Serow *Capricornis thar*. It is very rich in primate species (Anwaruddin Choudhury, *pers. comm.* 2003), namely Assamese Macaque *Macaca assamensis*, Rhesus Macaque *M. mulatta*, Stump-tailed Macaque *M. arctoides*, Northern Pig-tailed Macaque *M. nemestrina*, Capped Langur *Trachypithecus pileatus*, and Hoolock Gibbon *Hoolock hoolock*, and the Slow Loris *Nycticebus bengalensis*.

Joshi & Kunthe (2014) reported 52 species of dragonflies and damselflies from this IBA. Some new additions to the checklist of India are *Gynacantha bainbriggei*, *Brachydiplax chalybea*, *Cratilla lineata*, *Diplacodes nebulosa*, *Rhyothemis variegata*, *Tramea basilaris* and *Matrona nigripectus*.

Acharjee *et al.* (2012) carried out a study of the ichthyofaunal diversity of Dhansiri river which has reserve forest on one side and Intanki NP on the other. Two globally Threatened species, *Tor putitora* (EN) and *Tor tor* (NT), and one Data Deficient species *Channa barca* were collected from this site.

LAND USE

- Nature Reserve
- Agriculture
- Forestry

THREATS AND CONSERVATION ISSUES

- Encroachment
- Poaching
- Tree felling

Intanki NP is adjacent to Dhansiri RF in Assam. While Dhansiri has already become an Elephant Reserve, Intanki is still at the proposed stage. The elephants move between the two forests. There has been some encroachment and illegal logging in the park. Due to the alleged presence of extremists in the national park, movement of government officials is restricted.

KEY CONTRIBUTOR

Anwaruddin Choudhury

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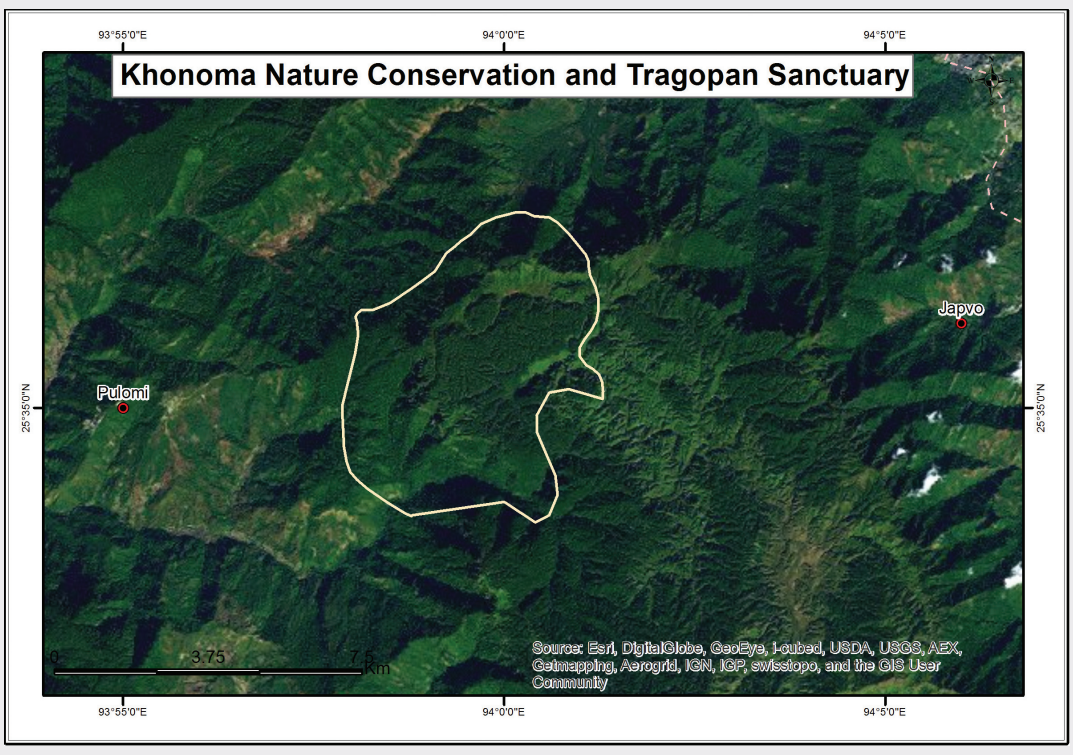
KHONOMA NATURE CONSERVATION AND TRAGOPAN SANCTUARY

IBA Site Code	:	IN-NL-03	**Altitude**	:	1,900–2,750 msl
Administrative Region (State)	:	Nagaland	**Rainfall**	:	>2,000 mm
District	:	Kohima	**Temperature**	:	2 °C to 25 °C
Coordinates	:	25° 39' 32" N, 94° 02' 01" E	**Biogeographic Zone**	:	Northeast
Ownership	:	Community	**Habitats**	:	Tropical Evergreen Forest, Tropical Semi-evergreen Forest, Sub--Tropical Broadleaf Forest
Area	:	2,500 ha			

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 130: Eastern Himalaya)

PROTECTION STATUS : Wildlife Sanctuary, established December, 1998.



GENERAL DESCRIPTION

The Angami tribe of South Nagaland has been traditionally conserving forests even within their agricultural areas. In 1989, the Village Council agreed to protect the forest of the Khonoma area, an important source of water to the village and its wet paddy cultivation. The Council constituted an independent body, the Khonoma Nature Conservation and Tragopan Sanctuary (KNCTS) Trust. The sanctuary is located 16 km south of Kohima city, bordering Manipur to the south. There is a self-imposed, complete ban on hunting in Khonoma village.

KNCTS includes part of Dzuku valley, a small valley which is formed by the Dzuku, a tributary of the Barak river. The Temperate Broadleaf Forest of this area supports good numbers of Blyth's Tragopan *Tragopan blythii*.

A well preserved patch of Sub-Tropical Broadleaf Forest is present in KNCTS. In the higher reaches, Temperate Broadleaf Forest is found, with Oak dominant in both the forest types.

During a survey sponsored by the IBA programme, Dark-rumped Swift *Apus acuticauda* was reported for the first time in Nagaland state (Ahmed *et al*. 2003).

AVIFAUNA

Not much information is available on the avifauna of this IBA, except that a new locality of Dark-rumped Swift has been recorded (Ahmed *et al*. 2003). Other species recorded are the Grey Sibia *Heterophasia gracilis*, Rufous-breasted Accentor *Prunella strophiata*, Red-throated Flycatcher *Ficedula parva*, Large Niltava *Niltava grandis*, Golden

DHRITIMAN MUKHERJEE

Protection of about 2,500 ha forest by Agami tribe of Nagaland is a very good community conservation initiative. It should be replicated all over Nagaland

Babbler *Stachyris chrysaea*, Silver-backed Needletail *Hirundapus cochinchinensis*, and Rufous-winged Fulvetta *Alcippe castaniceps*. A good population of Blyth's Tragopan was also recorded (Choudhury 1997).

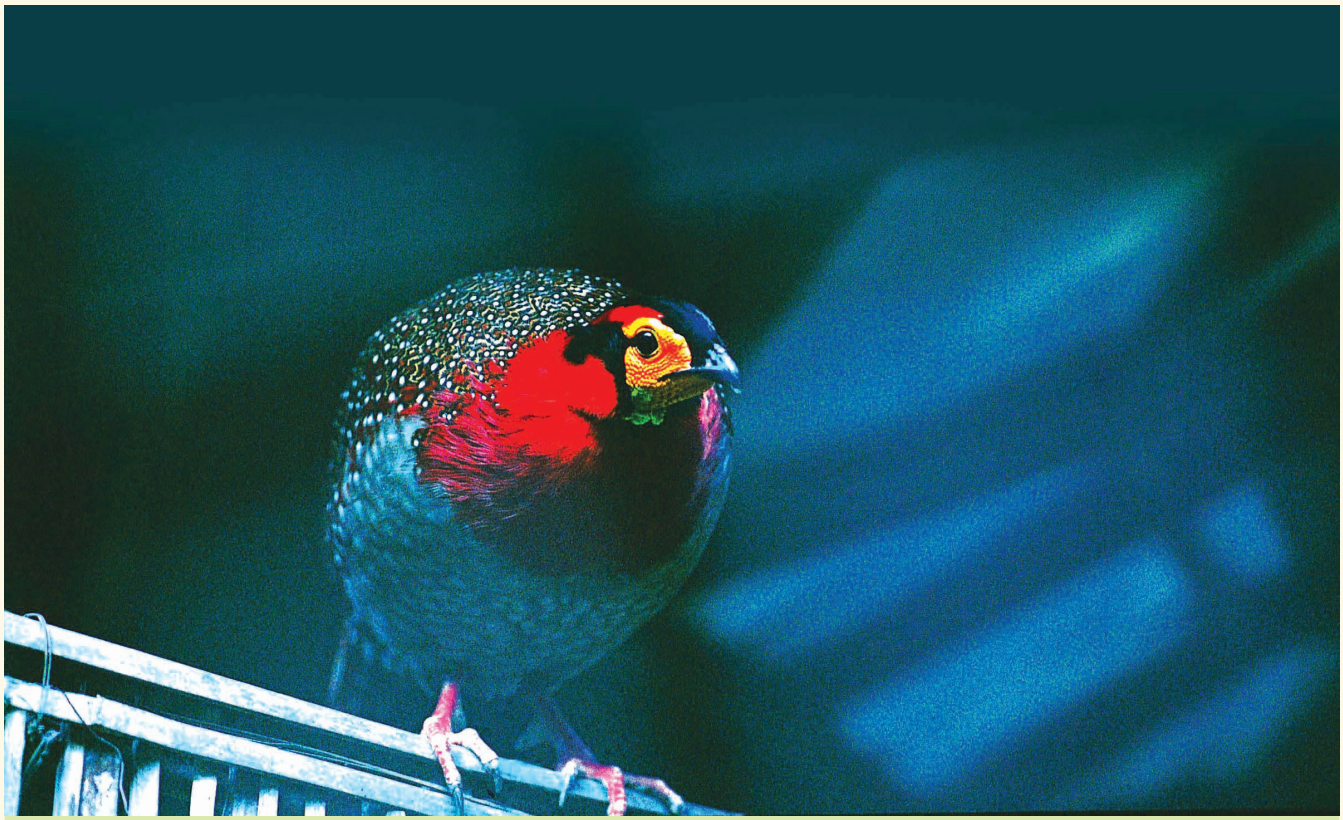
This site falls under the Eastern Himalaya Endemic Bird Area (EBA 130), in which 21 restricted-range species are included. Many of these are likely to occur in Khonoma. Choudhury (2001) has seen many restricted-range species being sold for meat in the market of the state capital. Khonoma adjoins Kohima town, so it is likely that many restricted-range species are caught from this site to be traded in Kohima. Striped Laughingthrush *Trochalopteron virgatum*, Blackish-breasted Babbler *Sphenocichla humei*

VULNERABLE	
Blyth's Tragopan	*Tragopan blythii*
Dark-rumped Swift	*Apus acuticauda*
Grey-sided Thrush	*Turdus feae*
NEAR THREATENED	
Cachar Wedge-billed Babbler	*Sphenocichla roberti*
Blackish-breasted Babbler	*Sphenocichla humei*
Naga Wren-babbler	*Spelaeornis chocolatinus*
Yellow-rumped Honeyguide	*Indicator xanthonotus*
ENDEMIC BIRD AREA 130: EASTERN HIMALAYA	
Blyth's Tragopan	*Tragopan blythii*
Dark-rumped Swift	*Apus acuticauda*
Grey Sibia	*Heterophasia gracilis*
White-naped Yuhina	*Yuhina bakeri*

(Near Threatened), Streak-throated Barwing *Actinodura waldeni*, and White-naped Yuhina *Yuhina bakeri* were among the birds being sold.

Abidur Rahman (*pers. comm*. 2014) has reported many other important species from this area which he has been visiting frequently since September, 2006. The species recorded are Blyth's Tragopan (VU), Cachar Wedge-billed Babbler *Sphenocichla roberti* (NT), Naga or Long-tailed Wren-babbler *Spelaeornis chocolatinus* (NT), Yellow-rumped Honeyguide *Indicator xanthonotus* (NT), Spot-breasted Scimitar-babbler *Pomatorhinus mcclellandi*, Grey-sided Thrush *Turdus feae* (VU), Eyebrowed Thrush *Turdus obscurus*, Mountain Bamboo-partridge *Bambusicola fytchii*, Long-billed Wren-babbler *Rimator malacoptilus*, Striped Laughingthrush *Trochalopteron virgatum*, Assam Laughingthrush *Trochalopteron chrysopterum*, Rusty-capped Fulvetta *Schoeniparus dubius*, Mountain Hawk-eagle *Nisaetus nipalensis*, Dark-rumped Swift *Apus acuticauda* (VU), Long-billed Ground-thrush *Zoothera monticola*, among others. More than 230 bird species have been listed so far from this small community protected area.

Grewal (2010), during his visit to Khonoma, sighted many birds such as Kalij Pheasant *Lophura leucomelanos*, Little Pied Flycatcher *Ficedula westermanni*, Spotted Forktail *Enicurus maculatus*, Black-breasted Thrush *Turdus dissimilis*, Gould's Shortwing *Heteroxenicus*



ANWARUDDIN CHOUDHURY

Blyth's Tragopan *Tragopan blythii* is a Vulnerable species that needs total protection from hunting and habitat destruction. There are very few photographs in the wild

stellatus, Mrs. Gould's Sunbird *Aethopyga goulidae*, Fire-tailed Sunbird *Aethopyga ignicauda*, and Red-faced Liocichla *Liocichla phoenicea*.

During a recent survey of Khonoma in November 2014, Naga Wren-babbler was photographed at 25º 38' 05.5" N, 93º 59' 54.4" N at 1,931 msl. Other birds observed were Little Forktail *Enicurus scouleri*, White-throated Kingfisher *Halcyon smyrnensis*, Oriental Turtle-dove *Streptopelia orientalis*, Kalij Pheasant, Mountain Bamboo-partridge, and Streaked-breasted Scimitar-babbler *Pomatorhinus ruficollis*.

OTHER KEY FAUNA

No detailed work has been done on the mammalian fauna, but the following species have been recorded: Clouded Leopard *Neofelis nebulosa*, Leopard *Panthera pardus*, Himalayan Serow *Capricornis thar*, Barking Deer or Indian Muntjac *Muntiacus muntjak*, Wild Boar *Sus scrofa*, Stump-tailed Macaque *Macaca arctoides*, Slow Loris *Nycticebus bengalensis*, and Hoolock Gibbon *Hoolock hoolock* (A.U. Choudhury, *pers. comm*. 2003). According to Tsilie Sakrie (*pers. comm*. 2014), crop damage by Wild Boar has increased tremendously since hunting was stopped.

According to Pathak (2009), about 250 species of plants, including over 70 medicinal plants, have been recorded so far from this area. More than 80 kinds of wild fruit, 116 kinds of wild vegetables, nine varieties of mushrooms, and

ASAD R. RAHMANI

BNHS has conducted workshops and meeting with members of the Agami tribe under the supervision of Tsilie Sakrie, the former Chairman of the area.

five kinds of natural dye are gathered by villagers from the surrounding forests. In the biodiversity register, villagers have also recorded 25 types of snakes, six lizards, 11 amphibians, and nearly 200 kinds of birds.

In 2014, the rare butterfly Bhutan Glory *Bhutanitis lidderdalii*, which is protected under Schedule II of the Wildlife (Protection) Act, 1972, was often seen in and around Khonoma (Monsoon Jyoti Gogoi, *pers. comm*. 2014).

PANKAJ SEKHSARIA

Khonoma Nature Reserve in Nagaland is one of the finest examples of community conserved areas

LAND USE

- Nature reserve
- Tourism and recreation

THREATS AND CONSERVATION ISSUES

The KNCTS Trust is one of the pioneering community conservation efforts in northeast India. Khonoma Sanctuary is an important catchment area for terrace cultivation and management of the Dimapur valley. The area of KNCTS was reduced from 7,500 ha to 2,500 ha, just before its declaration as a Tragopan Sanctuary by the Village Council. Efforts should be made to restore the area to 7,500 ha.

KEY CONTRIBUTORS

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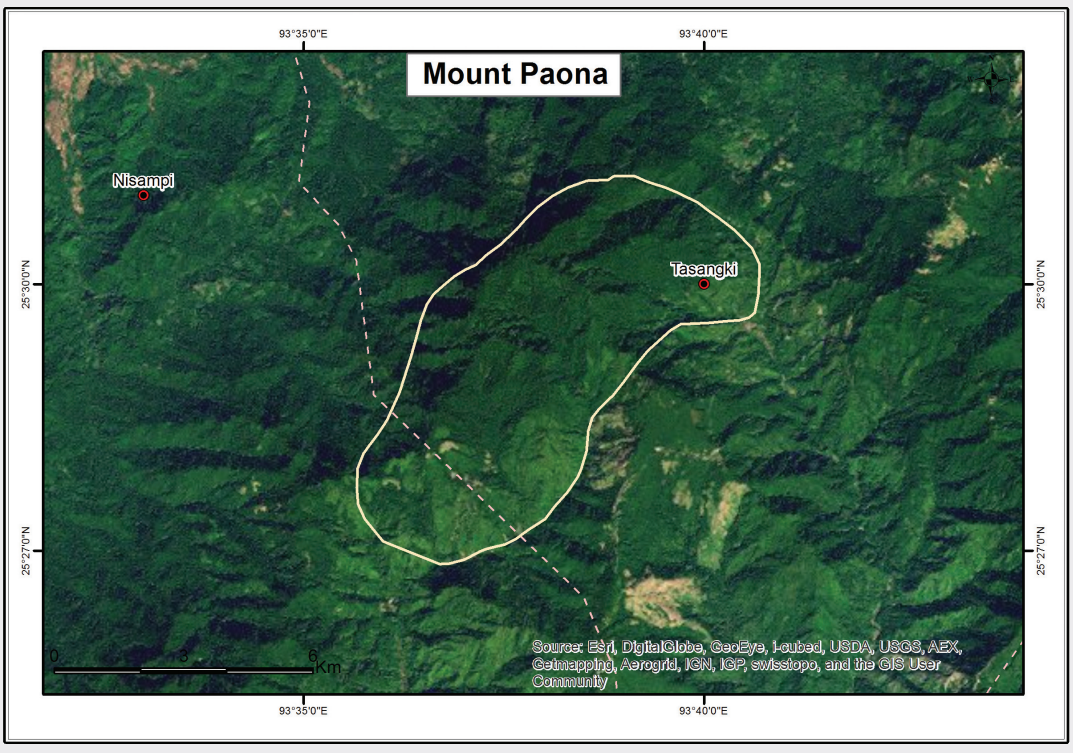
MOUNT PAONA

IN-NL-04

IBA Site Code	:	IN-NL-04	**Area**	:	*c.* 3,000 ha
Administrative Region (State)	:	Nagaland	**Altitude**	:	1,400–2,062 msl
District	:	Peren	**Rainfall**	:	>1,800 mm
Coordinates	:	25º 30' 00" N, 93º 39' 00" E	**Temperature**	:	2 ºC to 25 ºC
			Biogeographic Zone	:	Northeast
Ownership	:	Community	**Habitats**	:	Subtropical Broadleaf Forest

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 130: Eastern Himalaya)

PROTECTION STATUS : Not officially protected. Declared as a Community Conserved Area (CCA), conserved by the people of Benrue village.



GENERAL DESCRIPTION

Mount Paona is in the Barail range, a part of the Eastern Himalaya Endemic Bird Area (EBA 130) in Peren district in southwestern Nagaland. The highest peak in this montane IBA reaches 2,062 msl. The hilltop and adjacent areas have good tree cover. The nearest town is Peren, which has recently been declared as the district headquarter (http://www.peren-district.nic.in/)

AVIFAUNA

This IBA is known for its population of Blyth's Tragopan *Tragopan blythii* (Choudhury 2001). The other globally Threatened species recorded include the Rufous-necked Hornbill *Aceros nipalensis*, though it is very rare in Mt Paona. Four more hornbill species occur here, including the Near Threatened Great Pied *Buceros bicornis* and Austen's Brown *Anorrhinus austeni*. All these hornbills are rare because they are hunted for meat and feathers. The feathers are in great demand for use in ceremonial headgears headdresses.

Galliforms such as the Kaleej Pheasant *Lophura leucomelanos*, Red Junglefowl *Gallus gallus*, Mountain Bamboo-partridge *Bambusicola fytchii*, Rufous-throated Partridge *Arborophila rufogularis*, and Hill Partridge *Arborophila torqueola* occur widely.

During a recent survey by a BNHS team in November, 2014 in and around Benreu village, the following species were seen: Mountain Bamboo-partridge, Kaleej Pheasant *Lophura leucomelanos*, Spotted Wren-babbler *Elachura formosa*, Black Eagle *Ictinaetus malayensis*, and Long-tailed Broadbill *Psarisomus dalhousiae*.

DHRITIMAN MUKHERJEE

Mount Poana in the East Barail Range is a part of the Eastern Himalayan Endemic Bird Area. About 3,000 ha has been declared as Community Conserved Area by the villagers of Benrue

Five restricted-range species of the Eastern Himalaya Endemic Bird Area (EBA 130), including the Vulnerable Blyth's Tragopan, have been recorded in the area.

During a bird survey in January, 2013 (Ngukholal Khongsai *pers. comm.*), it was found that Grey Sibia is locally common, while the Minlas (Blue-winged Minla *Siva cyanouroptera*, Red-tailed Minla *Minla ignotincta*, and Bar-throated Minla *Chrysominla strigula*) were also seen regularly. Yellow-throated Laughingthrush *Dryonastes galbanus*, Blyth's Tragopan, and Naga or Long-tailed Wren-babbler *Spelaeornis chocolatinus* were also seen during the survey. The Dark-rumped Swift *Apus acuticauda* has also been recorded.

OTHER KEY FAUNA

Slow Loris *Nycticebus bengalensis*, Hoolock Gibbon *Hoolock hoolock*, Stump-tailed Macaque *Macaca arctoides*, Barking Deer or Indian Muntjac *Muntiacus muntjak*, Himalayan Serow *Capricornis thar*, Leopard *Panthera pardus*, and Asiatic Black Bear *Ursus thibetanus* are some noteworthy mammals (A.U. Choudhury. *pers. comm*. 2003).

VULNERABLE	
Blyth's Tragopan	*Tragopan blythii*
Rufous-necked Hornbill	*Aceros nipalensis*
Dark-rumped Swift	*Apus acuticauda*
NEAR THREATENED	
Great Pied Hornbill	*Buceros bicornis*
Austen's Brown Hornbill	*Anorrhinus austeni*
Naga Wren-babbler	*Spelaeornis chocolatinus*
ENDEMIC BIRD AREA 130: EASTERN HIMALAYA	
Blyth's Tragopan	*Tragopan blythii*
Streak-throated Barwing	*Actinodura waldeni*
Grey Sibia	*Heterophasia gracilis*
Beautiful Sibia	*Heterophasia pulchella*
White-naped Yuhina	*Yuhina bakeri*

LAND USE

- Forests
- Agriculture, with rice cultivation, orchards (Orange), plantations (Pine),
- *Jhum* or shifting cultivation

THREATS AND CONSERVATION ISSUES

- Felling of trees
- *Jhum* cultivation on the slopes and Poaching

People have come together to form a Community Conserved Area in Mount Paona – the third highest peak in the state. Mount Paona itself has three peaks, and watch towers have been constructed in recent years. There is also a water tank that helps villagers meet their water needs.

Jhum cultivation, felling of trees and poaching, including trapping of galliforms, are the main conservation issues, though they are all banned in the CCA. Blyth's Tragopan, the state bird of Nagaland, is not killed deliberately in most cases, as its hunting is banned since 1991. The villagers liken its call to that of a tiger, and know that March is the best time to spot it. We can sense pride in the village for having a population of this rare and beautiful state bird.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Khekiho Sohe, Ngukholal Khongsai.

KEY REFERENCE

Choudhury, A.U. (2001) Some bird records from Nagaland, north-east India. *Forktail* 17: 91–103.

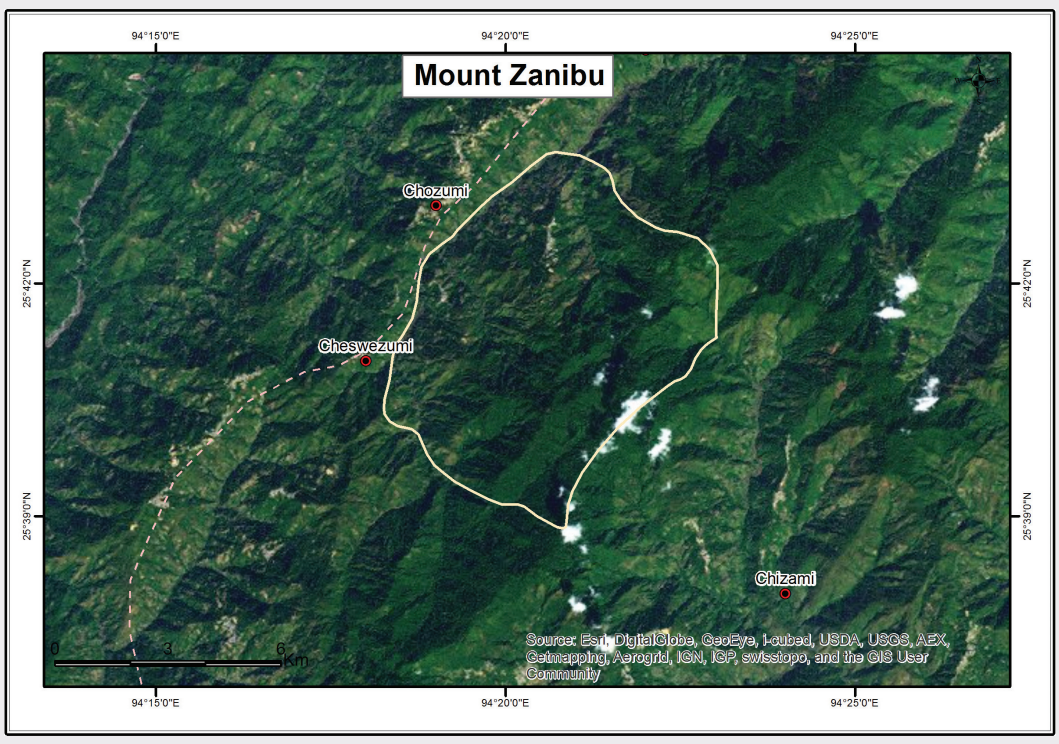
Links: http://www.tourismnagaland.com/Hotspots/Peren.html
http://www.peren-district.nic.in/
Nimesh Ved's Blog : http//nimesh-ved.blogspot.in/2014/03/silly-birds-and-goal-posts-atbenrue.html.

MOUNT ZANIBU

IBA Site Code	:	IN-NL-05	**Altitude**	:	1,600–2,426 msl
Administrative Region (State)	:	Nagaland	**Rainfall**	:	>2,000 mm
District	:	Phek	**Temperature**	:	2 °C to 25 °C
Coordinates	:	25° 40' 60" N, 94° 20' 60" E	**Biogeographic Zone**	:	Northeast
Ownership	:	Community	**Habitats**	:	Subtropical Broadleaf Forest, Montane Wet Temperate Forest
Area	:	*c.* 4,000 ha			

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 130: Eastern Himalaya)

PROTECTION STATUS : Not officially protected.



GENERAL DESCRIPTION

Located in Phek district in southern Nagaland, Mount Zanibu IBA is known for its lake, rich forest, and the presence of Blyth's Tragopan *Tragopan blythii* and Rufous-necked Hornbill *Aceros nipalensis*. The lake is known as Dzudu and is surrounded by dense forest (Choudhury 2002a). This IBA is hilly, with Mount Zanibu being the highest point at 2,426 msl. The area is covered with primary Subtropical Broadleaf forest, with small areas of Temperate Broadleaf forest on the hilltops.

AVIFAUNA

Besides Rufous-necked Hornbill and Blyth's Tragopan, Mrs. Hume's Pheasant *Syrmaticus humiae* has been reported, especially from the border, which is covered with secondary forest, trees, and grass (Choudhury 2002b). There is an old record of another globally Threatened species, the Purple Wood Pigeon (now Pale-capped Pigeon) *Columba punicea* from near Phek (Ripley 1952), which is not far from this IBA. Except for a brief survey by Choudhury (2002a), there has been no study in the area. The Pale-capped Pigeon has not been re-sighted by anyone else recently.

Galliforms recorded in the area include the Kaleej Pheasant *Lophura leucomelanos*, Mountain Bamboo-partridge *Bambusicola fytchii*, Rufous-throated Partridge *Arborophila rufogularis*, and Hill Partridge *Arborophila torqueola*.

Five restricted-range species of the Eastern Himalaya Endemic Bird Area (EBA 130), including the State Bird Blyth's Tragopan, occur in the area.

OTHER KEY FAUNA

Hoolock Gibbon *Hoolock hoolock*, Stump-tailed Macaque

DHRITIMAN MUKHERJEE

Besides giving protection to bird life, 4,000 ha Community Conserved Area in Mount Zanibu also give protection to species such as Hoary Bamboo Rat *Rhizomys pruinosus* that is being hunted all over Nagaland

VULNERABLE	
Blyth's Tragopan	*Tragopan blythii*
Pale-capped Pigeon	*Columba punicea*
Rufous-necked Hornbill	*Aceros nipalensis*
NEAR THREATENED	
Mrs. Hume's Pheasant	*Syrmaticus humiae*
Great Pied Hornbill	*Buceros bicornis*
ENDEMIC BIRD AREA 130: EASTERN HIMALAYA	
Blyth's Tragopan	*Tragopan blythii*
Grey Sibia	*Heterophasia gracilis*
Beautiful Sibia	*Heterophasia pulchella*
White-naped Yuhina	*Yuhina bakeri*
Streak-throated Barwing	*Actinodura waldeni*

Macaca arctoides, Asiatic Black Bear *Ursus thibetanus*, Dhole or Wild Dog *Cuon alpinus*, Leopard *Panthera pardus*, Barking Deer or Indian Muntjac *Muntiacus muntjak*, and Himalayan Serow *Capricornis thar* are the noteworthy mammals (A.U. Choudhury, *pers. comm*. 2003).

LAND USE

- Forestry
- Agriculture

THREATS AND CONSERVATION ISSUES

- Felling of trees
- *Jhum* (shifting cultivation) on the slopes
- Poaching

The major problems in this IBA are tree felling for timber, and *jhum* cultivation. Poaching, including trapping of mammals and birds, which are common practices in the IBA, should be stopped with the involvement of local people and the Forest Department.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Khekiho Sohe, Thomas Kent.

REFERENCES

Choudhury, A.U. (2002a) Major inland wetlands of north-eastern India. A report submitted to SACON, Coimbatore. Pp. 49.

Choudhury, A.U. (2002b) Survey of Mrs. Hume's Pheasant: NE India. Final Report to OBC, UK. Technical Report No. 5 of The Rhino Foundation for Nature in NE India, Guwahati. Pp. 30.

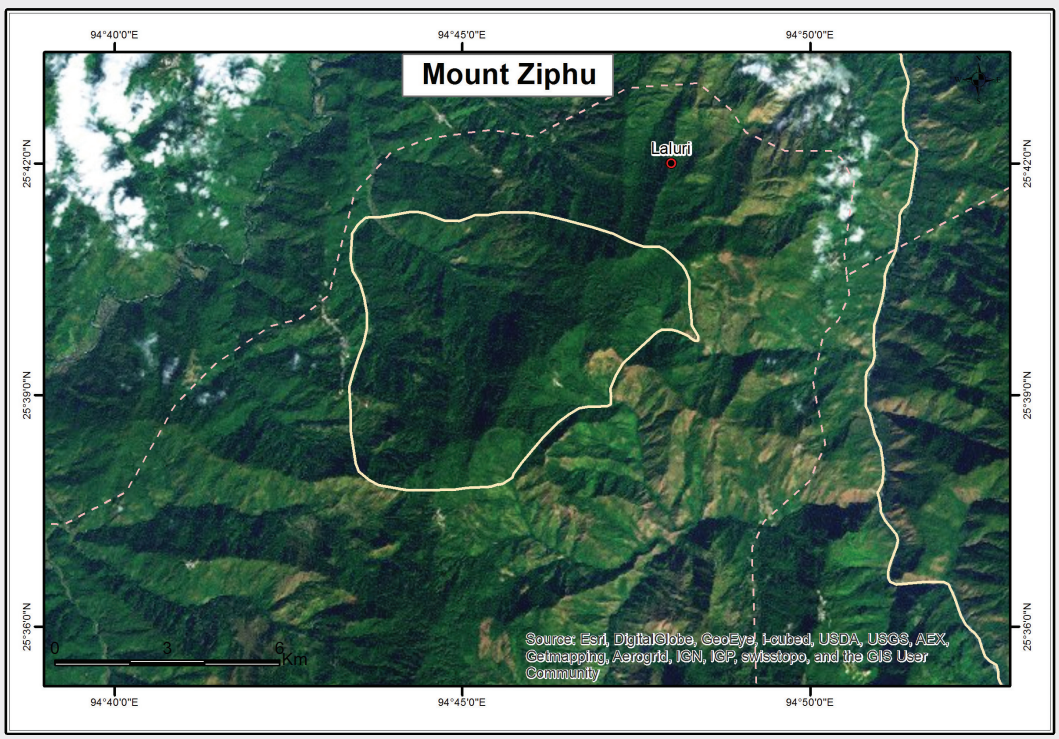
Ripley, S.D. (1952) A collection of birds from the Naga Hills. *JBNHS* 50: 475–514.

MOUNT ZIPHU

IBA Site Code	:	IN-NL-06	**Area**	:	*c.* 5,000 ha
Administrative Region (State)	:	Nagaland	**Altitude**	:	1,500–2,500 msl
District	:	Phek	**Rainfall**	:	>2,000 mm
Coordinates	:	25º 38' 60" N, 94º 45' 00" E	**Temperature**	:	2 ºC to 25 ºC
Ownership	:	Community	**Biogeographic Zone**	:	Northeast
			Habitats	:	Subtropical Broadleaf Forest

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 130: Eastern Himalaya)

PROTECTION STATUS : Not officially protected.



GENERAL DESCRIPTION

Mount Ziphu is located in the south-eastern part of Nagaland in Phek district, in the catchment area of River Chindwin of Myanmar. This IBA is hilly, Mount Ziphu being the highest peak with an elevation of 2,500 msl. The hilltop and adjacent slopes have some fine stands of primary Subtropical Broadleaf Forest, with small areas of Temperate Broadleaf Forest on the hilltop.

AVIFAUNA

This IBA was first surveyed in 1950 by Ripley (1952). A number of globally Threatened species have been recorded, including the Rufous-necked Hornbill *Aceros nipalensis* and Blyth's Tragopan *Tragopan blythii*. Both the species are rare (A.U. Choudhury, *pers. comm.* 2003). Mrs. Hume's Pheasant *Syrmaticus humiae* inhabits the grassy forest edge in secondary forest (Choudhury 2002). The only record of the rare Wood Snipe *Gallinago nemoricola* in Nagaland was from this IBA (Choudhury 2003). Although Ripley (1952) obtained specimens of many species from Ziphu, he did not mention any of the threatened species.

Galliforms recorded in the area are Kaleej Pheasant *Lophura leucomelanos*, Red Junglefowl *Gallus gallus*, Mountain Bamboo-partridge *Bambusicola fytchii*, Rufous-throated Partridge *Arborophila rufogularis*, and Hill Partridge *Arborophila torqueola*. At least six restricted range species of the Eastern Himalaya Endemic Bird Area (EBA 130), including Blyth's Tragopan, occur in the area.

OTHER KEY FAUNA

Primates such as the Hoolock Gibbon *Hoolock hoolock* and Stump-tailed Macaque *Macaca arctoides* have become

DHRITIMAN MUKHERJEE

Hunting has been a tradition and necessity for local people living in remote areas in Nagaland but this has to change with changing times. Hunting is now done with modern firearms and for commercial purpose, resulting in extreme rarity of many species. A positive development is that communities are coming forward to give protection in some areas such as Mount Ziphu

VULNERABLE	
Blyth's Tragopan	*Tragopan blythii*
Wood Snipe	*Gallinago nemoricola*
Rufous-necked Hornbill	*Aceros nipalensis*
NEAR THREATENED	
Mrs Hume's Pheasant	*Syrmaticus humiae*
Blackish-breasted Babbler	*Sphenocichla humei*
ENDEMIC BIRD AREA 130: EASTERN HIMALAYA	
Blyth's Tragopan	*Tragopan blythii*
Blackish-breasted Babbler	*Sphenocichla humei*
Streak-throated Barwing	*Actinodura waldeni*
Grey Sibia	*Heterophasia gracilis*
Beautiful Sibia	*Heterophasia pulchella*
White-naped Yuhina	*Yuhina bakeri*

extremely rare, but they still occur. Barking Deer or Indian Muntjac *Muntiacus muntjak*, Himalayan Serow *Capricornis thar*, Leopard *Panthera pardus*, and Asiatic Black Bear *Ursus thibetanus* are some other noteworthy mammals of this IBA (A.U. Choudhury, *pers. comm*. 2003).

LAND USE

- Forests
- Agriculture

THREATS AND CONSERVATION ISSUES

- Felling of trees
- *Jhum* cultivation on the slopes
- Poaching

A cement plant is located at Waziho near this IBA. As in any other site in Nagaland, felling of trees, *jhum* cultivation, and poaching, including trapping, are the main conservation issues.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Khekiho Sohe, Thomas Kent, Hakim.

REFERENCES

Choudhury, A.U. (2002) Survey of Mrs. Hume's Pheasant: NE India. Final Report to OBC, UK. Technical Report No. 5 of The Rhino Foundation for nature in NE India, Guwahati. Pp. 30.

Choudhury, A.U. (2003) Some additions to the birds of Nagaland. *Forktail* 19: 150.

Ripley, S.D. (1952) A collection of birds from the Naga Hills. *JBNHS* 50: 475–514.

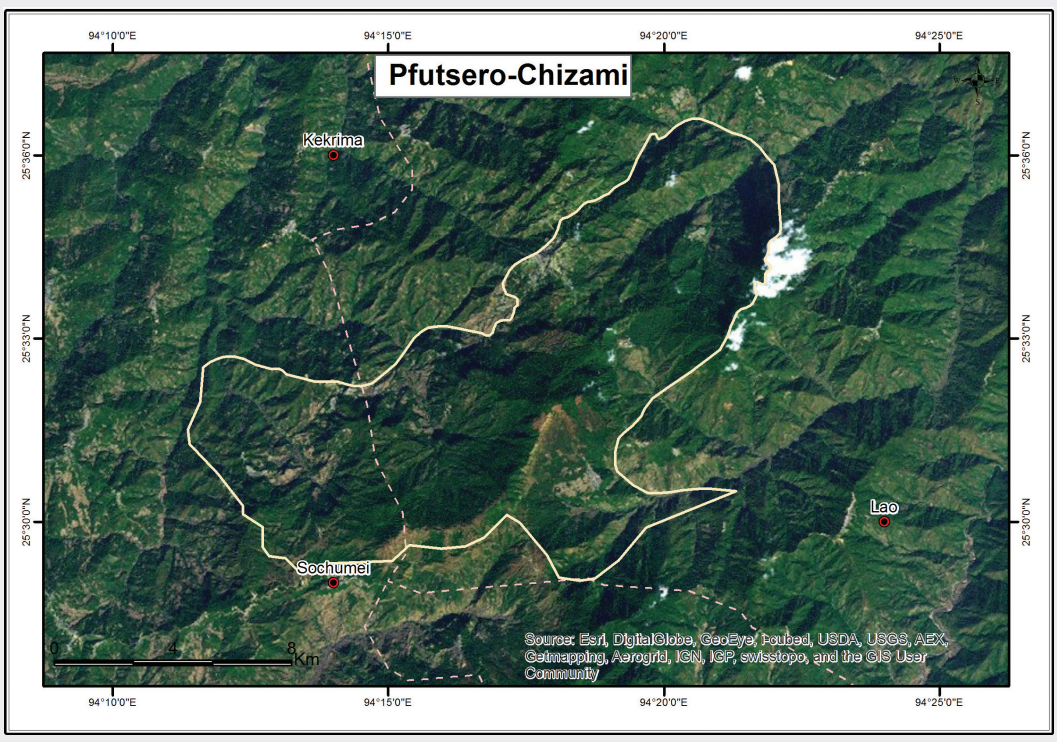
PFUTSERO-CHIZAMI

IN-NL-07

IBA Site Code	: IN-NL-07		**Altitude**	:	1,400–2,300 msl
Administrative Region (State)	: Nagaland		**Rainfall**	:	>2,000 mm
District	: Phek		**Temperature**	:	2 °C to 25 °C
Coordinates	: 25° 36' 00" N, 94° 19' 60" E		**Biogeographic Zone**	:	Northeast
Ownership	: Community		**Habitats**	:	Subtropical Broadleaf Hill Forest, Tropical Secondary Scrub
Area	: *c.* 7,000 ha				

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 130: Eastern Himalaya)

PROTECTION STATUS : Not officially protected.



GENERAL DESCRIPTION

Pfutsero-Chizami IBA is located in Phek district in southern Nagaland, bordering Manipur. Ripley (1952) referred to Pfutsero in his paper on birds from the Naga Hills. Blyth's Tragopan *Tragopan blythii* and Mrs. Hume's Pheasant *Syrmaticus humiae* are the main Threatened species found in the area. A part of this IBA forms the catchment area of River Chindwin of Myanmar.

This IBA is hilly with good forest cover, particularly on the ridges and hilltops. Near Chizami, secondary forest with shrubs, scrub, and grass dominates. This is mainly due to anthropogenic factors (A. U. Choudhury, *pers. comm.* 2003).

Nagaland's highest town (Pfutsero) is situated at a height of 2,133 msl.

AVIFAUNA

More than 80 bird species have been recorded in the area during brief surveys, but there may actually be more than 200 species. While the subtropical forest near Pfutsero is a stronghold of Blyth's Tragopan (Choudhury 2001), the secondary forest near Chizami is known for Mrs. Hume's Pheasant (Choudhury 2002a). Besides these two globally Threatened species, four restricted-range species (including Blyth's Tragopan) have been recorded in the area. There is no recent record of the Rufous-necked Hornbill *Aceros nipalensis*, as all hornbills are under heavy poaching pressure for their meat and feathers. The feathers are in great demand for use in ceremonial headdresses.

Among the so-called game birds, Kaleej Pheasant *Lophura leucomelanos* and Mountain Bamboo-partridge *Bambusicola fytchii* are found in the site.

DHRITIMAN MUKHERJEE

Although the basic idea of the IBA programme is to provide a string of sites that protect globally threatened and endemic species, they also provide protection to common species such as Mrs. Gould's Sunbird

VULNERABLE	
Blyth's Tragopan	*Tragopan blythii*
NEAR THREATENED	
Mrs. Hume's Pheasant	*Syrmaticus humiae*
ENDEMIC BIRD AREAS 130: EASTERN HIMALAYAS	
Blyth's Tragopan	*Tragopan blythii*
Grey Sibia	*Heterophasia gracilis*
Beautiful Sibia	*Heterophasia pulchella*
White-naped Yuhina	*Yuhina bakeri*

OTHER KEY FAUNA

The Stump-tailed Macaque *Macaca arctoides*, Asiatic Black Bear *Ursus thibetanus*, Dhole *Cuon alpinus*, Leopard *Panthera pardus*, Barking Deer *Muntiacus muntjak*, and Himalayan Serow *Capricornis thar* are noteworthy mammals (A.U. Choudhury, *pers. comm.* 2003). There is a recent record of the rare and elusive Spotted Linsang *Prionodon pardicolor* from Chizami, where it is reportedly not uncommon (Choudhury 2002b).

Naro (2012), while photographing the butterflies of Chizami, came across Indian Tortoiseshell *Aglais cashmirensis aesis*, a butterfly which was possibly sighted for the first time in Nagaland.

LAND USE

- Forestry
- Agriculture

THREATS AND CONSERVATION ISSUES

- Felling of trees
- *Jhum* cultivation on the slopes
- Domestic firewood collection
- Poaching

Felling of trees, *jhum* cultivation, and hunting and trapping of wildlife are the main conservation issues. In Pfutsero township, the highest urban settlement in Nagaland at 2,133 m, there is great demand for domestic fuel wood in winter, which adversely affects the forest.

KEY CONTRIBUTORS

A.U. Choudhury, Khekiho Sohe, Thomas Kent, Thozhupu Mekrisu.

REFERENCES

Choudhury, A.U. (2001) Some bird records from Nagaland, north-east India. *Forktail* 17: 91–103.

Choudhury, A.U. (2002a) Survey of Mrs. Hume's Pheasant: NE India. Final Report to OBC, UK. Technical Report No. 5 of The Rhino Foundation for nature in NE India, Guwahati. Pp. 30.

Choudhury, A.U. (2002b) Some recent records of the Spotted Linsang *Prionodon pardicolor* from India. *Small Carnivore Conservation* 27: 12.

Naro, T. (2012) Sighting of *Aglais cashmirensis aesis* Fruhstorfer, 1912 (Nymphalidae) from Nagaland, India. *Journal of Threatened Taxa* 4(4): 2534–2535.

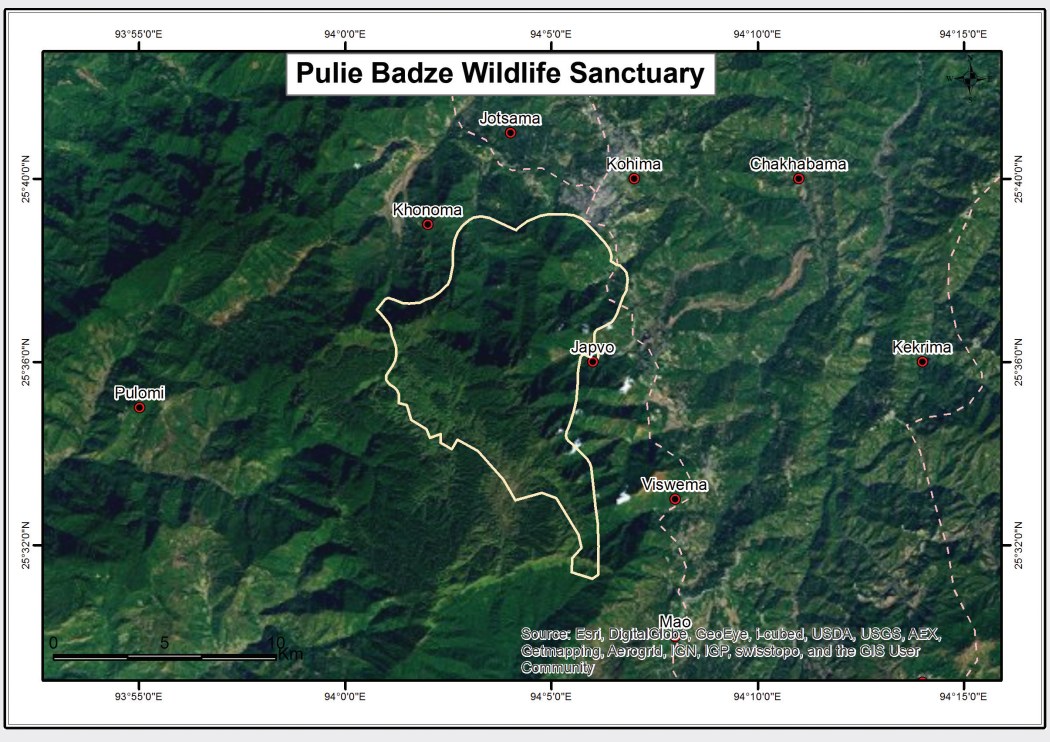
Ripley, S.D. (1952) A collection of birds from the Naga Hills. *JBNHS* 50: 475–514.

PULIE BADZE WILDLIFE SANCTUARY

IBA Site Code	: IN-NL-08		**Altitude**	:	1,600 – 3,048 m
Administrative Region (State)	: Nagaland		**Rainfall**	:	>2,000mm
District	: Kohima		**Temperature**	:	0 °C to 25 °C
Coordinates	: 25° 52' 55" N, 94° 00' 27"E		**Biogeographic Zone**	:	Northeast
Ownership	: State/Community		**Habitats**	:	Sub Tropical Broadleaf Hill and Montane Wet Temperate Forest
Area	: 10,923 ha				

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 130: Eastern Himalaya)

PROTECTION STATUS : Wildlife Sanctuary, established on 18 January, 1980.



GENERAL DESCRIPTION

Pulie Badze Wildlife Sanctuary (923 ha) is an important catchment area for Kohima town. The high hills of the Sanctuary overlook Kohima. Dzukou valley (10,000 ha) and Japfu peak, two important features in the area are located adjacent to the Sanctuary, and have been included in this IBA. The Japfu peak rises to about 3,048 m and is the second highest peak after the Saramati at 3,826 m. The Khonoma Nature Conservation and Tragopan Sanctuary, another important community protected area (also on IBA), is adjacent to this IBA. All these four sites form a single large continuous area of 20,000 ha or more, and are very important for avifauna conservation in southern Nagaland.

Being close to the state capital, Pulie Badze is witness to extensive anthropogenic pressure in the form of land grabbing, grazing cattle, firewood collection and hunting. Dzukou valley is covered with bamboo and other grass species. The valley harbours many species of flowering plants including the endemic Dzukou Lily *Lilium chitrangadae*. The valley receives a tremendous influx of local tourists during the flowering season. Unfortunately, the valley is a source of conflict for ownership between local tribes and the state governments of Manipur/Nagaland.

The lower reaches of the hills in these environs still hold good subtropical broadleaf forest and a good population of Blyth's Tragopan *Tragopan blythii*. Khasi Hill Swift or Dark-rumped Swift *Apus acuticauda* is an important discovery (Ahmed *et al*. 2003). Khonoma and other areas in this valley are likely to hold some populations of this Swift.

There are number of medicinal plants which are used for folk healing practices such as roots of *Achyranhes bidentata* is used to cure rheumatic diseases, bulb of Allium sativum

VULNERABLE	
Blyth's Tragopan	*Tragopan blythii*
Dark-rumped Swift	*Apus acuticauda*
NEAR THREATENED	
Blackish-breasted Babbler	*Sphenocichla humei*
ENDEMIC BIRD AREA 130: EASTERN HIMALAYAS	
Blyth's Tragopan	*Tragopan blythii*
Striped Laughingthrush	*Garrulax virgatus*
Brown-capped Laughingthrush	*Garrulax austeni*
Blackish-breasted Babbler	*Sphenocichla humei*
Streak-throated Barwing	*Actinodura waldeni*
Grey Sibia	*Heterophasia gracilis*
White-naped Yuhina	*Yuhina bakeri*

is used to ease cough, powder of stem bark of *Alstonia scholaris* is used to cure malaria, stem of Hedyotis scandens is chewed to reduce tooth ache and leaves of *Crotalaria bialata* are used to cure itching and ring worm (Shankar and Devalla 2012).

AVIFAUNA

The bird diversity of the area has not been evaluated yet. Pulie Badze Wildlife Sanctuary, Dzukuo-Japfu Area, and Khonoma Nature Conservation and Tragopan Sanctuary, share almost the same habitat and environment, therefore the avifauna is similar (A. U. Choudhury *pers. comm.* 2003).

Blyth's Tragopan *Tragopan blythii*, a globally threatened species, is found here (A. U. Choudhury *pers. comm.* 2003), along with the Dark-rumped Swift *Apus acuticauda*. The Biome species recorded from nearby Khonoma Nature Conservation and Tragopan Sanctuary are: Rufous-breasted Accentor *Prunella strophiata*, Stripe-throated Yuhina *Yuhina gularis*, Rufous-bellied Niltava *Niltava sundara*, Mountain Bamboo-partridge *Bambusicola fytchii*, Blue-throated Barbet *Megalaima asiatica*, Mountain Bulbul *Hypsipetes mcclellandii*, Maroon Oriole *Oriolus traillii*, Small Minivet *Pericrocotus cinnamomeus*, and Fire-tailed Sunbird *Aethopyga ignicauda*.

The Eastern Himalaya Endemic Bird Area is one of the major hotspots for bird diversity. In this EBA, 21 restricted range species have been identified, of which 7 have been found at Pulie Badze and nearby areas. However, once detailed studies are conducted, more restricted range species are likely to be found.

Pulie Badze appears to be important for biome restricted species also. Due to its high altitudinal variation from 1600 m to more than 3,000 m, two biomes occur in this site: Sino-Himalayan Temperate Forest (Biome-7), and Sino-Himalayan Subtropical Forest (Biome-8). A total of 207 species of birds are listed in these two biomes. Many of these are listed by Choudhury (2001) in his Nagaland checklist, but we do not know how many occur in Pulie Badze WLS.

OTHER KEY FAUNA

No detailed work has been done on the mammalian fauna but the following have been recorded: Clouded leopard *Neofelis nebulosa*, Leopard *Panthera pardus*, Himalayan Serow *Capricornis thar*, Barking Deer or Indian Muntjac *Muntiacus muntjak*, Wild Boar *Sus scrofa*, Stump-

DHRITIMAN MUKHERJEE

Pulie Badze Wildlife Sanctuary, near Kohima is an important site for species such as Mountain Bamboo-partridge *Bambusicola fytchii*. The Vulnerable Blyth's Tragopan *Tragopan blythii* is also reported from here, along with six other birds of Eastern Himalayan Endemic Bird Area

DHRITIMAN MUKHERJEE

The forest of Pulie-Badze-Dzukou-Zaphu harbours an endemic Dzukou Lily *Lilium chitrangadae* (not shown in the picture) and other interesting species.

tailed Macaque *Macaca arctoides*, Slow Loris *Nycticebus bengalensis*, and Hoolock Gibbon *Hoolock hoolock* (A. Choudhury *pers. comm*. 2003). Not much work has been done on other fauna of this area. There is a *keeda* (insect) market in Kohima which can be useful to find out insect diversity of the area as all sorts of species are brought for sale for food.

LAND USE

- Nature reserve
- Water catchment area
- Recreation
- Forestry

THREATS AND CONSERVATION ISSUES

- Hunting
- Unregulated tourism
- Encroachment

The Pulie Badze WLS adjoins Kohima town and is protected as a catchment area for the town. Conservation of the forest in this hill area ensures sustained water supply to the thickly populated town, which is currently facing a severe water crisis. Moreover, Dzukou Valley is an important tourist spot. The government plans to pump out water for the town, which needs careful examination. The conflict between communities living around Dzukou seems very high and is a delicate issue. The needs and interests of the local communities must be taken into account before implementing development or conservation programmes in the area. It would be wise to motivate the local community to declare the entire area as a biosphere reserve, which would serve as an important place for bird diversity conservation in southern Nagaland.

Dzukou Valley is visited by a large number of tourists, resulting in the accumulation of huge amounts of non-degradable garbage. Many tourists often collect the endemic Dzukou Lily which is confined to this small valley. They should be strictly prohibited.

KEY CONTRIBUTORS

Khekiho Shohe, Thomas Kent, Kulojyoti Lahkar, Firoz Ahmed, Anwaruddin Choudhury.

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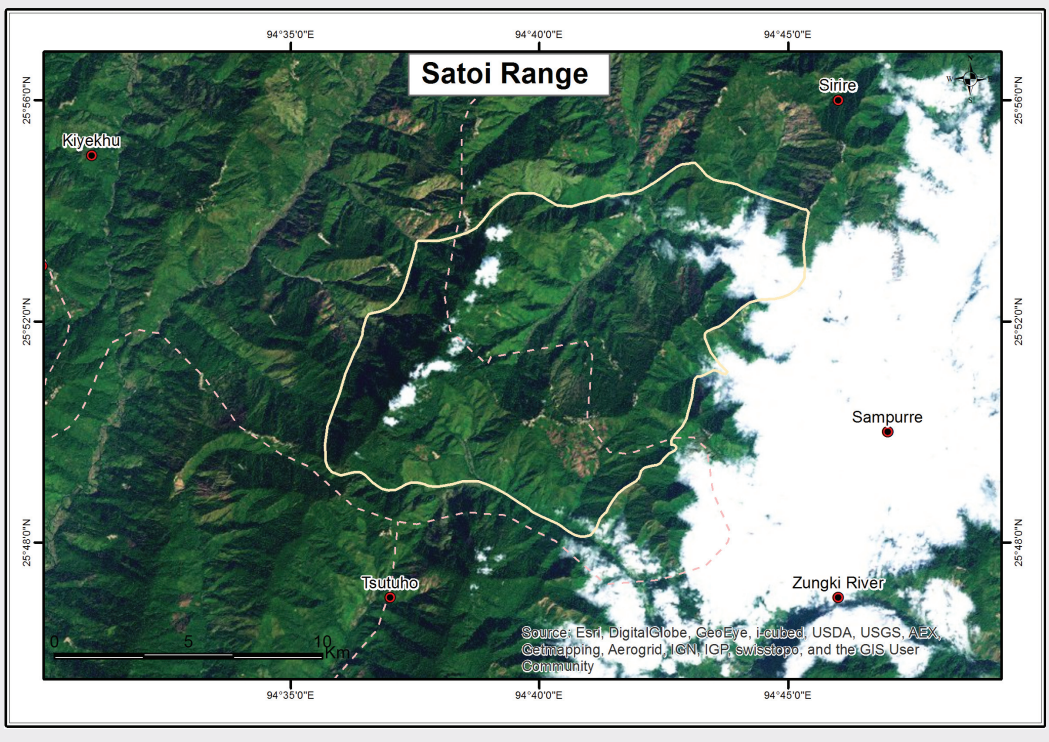
SATOI RANGE

IBA Site Code	: IN-NL-09		**Altitude**	:	1,800–2,400 msl
Administrative Region (State)	: Nagaland		**Rainfall**	:	>2,000 mm
District	: Zunheboto, Phek		**Temperature**	:	2 °C to 30 °C
Coordinates	: 25° 52' 00" N, 94° 40' 00" E		**Biogeographic Zone**	:	Northeast
Ownership	: Community		**Habitats**	:	Montane Wet Temperate Forest, Subtropical Broadleaf Hill Forest
Area	: *c.* 5,000 ha				

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 130: Eastern Himalaya)

PROTECTION STATUS : Not officially protected.



GENERAL DESCRIPTION

Satoi is located the midst of the Naga Hill ranges. It has intact prime forests and deep wooded valleys. This Data Deficient site is supposed to be extremely rich in avifauna. It harbours Temperate and Subtropical Broadleaf (Evergreen) Forests. The temperate forest is found mostly above 2,000 m.

The State Bird of Nagaland, Blyth's Tragopan *Tragopan blythii*, occurs here in good numbers, especially above 2,000 m. This species features in tourist brochures, posters, publicity material, and in government offices. In Satoi range, it is less persecuted than in other areas, due to which a good population is still found there.

AVIFAUNA

Choudhury (2001) reported 487 species of birds from Nagaland, including nine globally Threatened, five Near Threatened, and eight restricted-range species. Many of these species are likely to occur in Satoi range.

The most important species, for which this site is designated as an IBA, is Blyth's Tragopan. It is locally called *Ayigah* by the Sema Nagas and Mu by Angami Nagas. According to Choudhury (1997), Satoi is undoubtedly one of the best areas for this species in Nagaland. It usually occurs above 2,000 m in broadleaf forest.

Although Mrs. Hume's Pheasant *Syrmaticus humei* could not be recorded during a survey (Choudhury 2002), this rare species is likely to be present in the lower slopes.

Satoi range lies in the Eastern Himalaya Endemic Bird Area (EBA 130) (Stattersfield *et al.* 1998). However, only Grey Sibia *Heterophasia gracilis*, a restricted-range species, has been reported from Satoi, mainly because no detailed study on birds has been conducted here. Similarly, this site

DHRITIMAN MUKHERJEE

Black-throated Parrotbill *Paradoxornis nipalensis* though not a threatened species is under tremendous pressure of hunting, like all other birds in Nagaland. The IBA Programme aims to provide protection to all species

VULNERABLE	
Blyth's Tragopan	*Tragopan blythii*
Rufous-necked Hornbill	*Aceros nipalensis*
NEAR THREATENED	
Mrs. Hume's Pheasant (?)	*Syrmaticus humei*
ENDEMIC BIRD AREA 130: EASTERN HIMALAYA	
Grey Sibia	*Heterophasia gracilis*

has two important biomes, with a total of 207 biome species, as listed by BirdLife International (undated), but it is not known how many biome species occur in Satoi.

OTHER KEY FAUNA

Despite hunting pressure, several large mammal species still survive in this site: Asiatic Black Bear *Ursus thibetanus*, Leopard *Panthera pardus*, Himalayan Serow *Capricornis thar*, Barking Deer or Indian Muntjac *Muntiacus muntjak*, and Hoolock Gibbon *Hoolock hoolock*.

LAND USE

- Forestry
- *Jhum* cultivation in the lower reaches

THREATS AND CONSERVATION ISSUES

- Poaching
- Tree felling
- Building of roads

As the area is not under the control of the State Forest Department, there is no check on felling of trees, which occurs near villages. However, the main threat to the almost intact forests of Satoi comes from building of roads, which will open up vast areas for the timber mafia. Before major harm is done to this biodiversity hotspot, some measure of protection, either through community participation or through the State Forest Department, should be provided.

Detailed investigation of the biodiversity, especially avifauna, should be conducted to assess the true wealth of this site.

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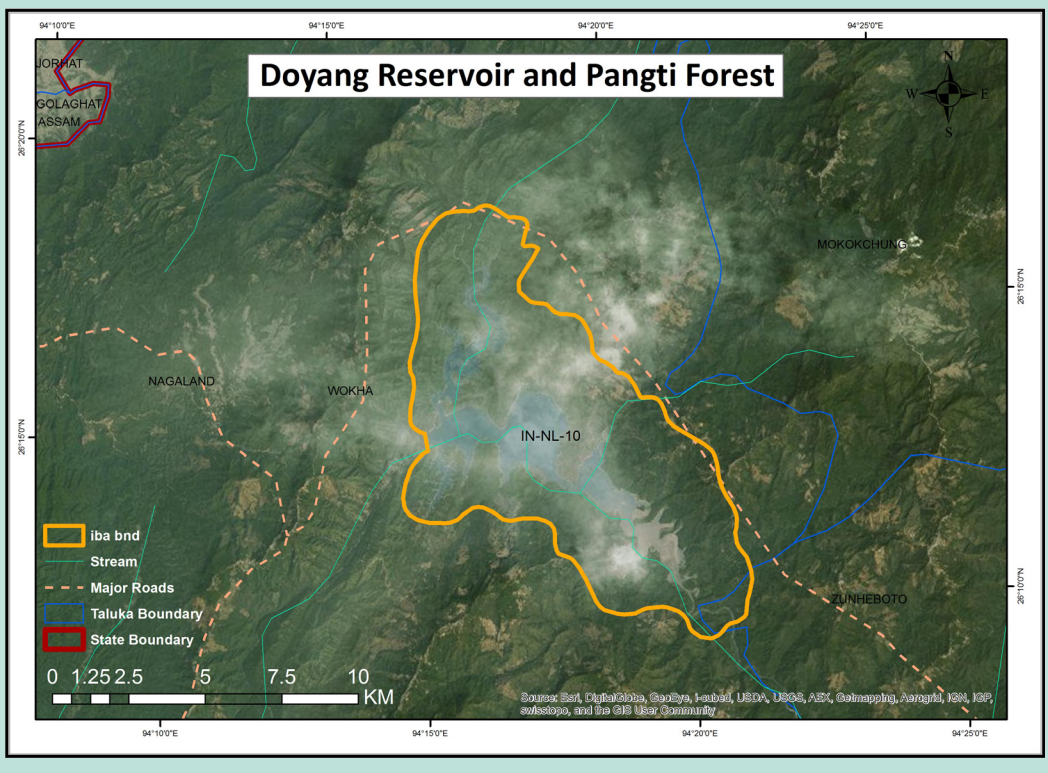
DOYANG RESERVOIR AND PANGTI FOREST

IBA Site Code	:	IN-NL-10	**Altitude**	:	300 msl
State	:	Nagaland	**Rainfall**	:	>2,000 mm
District	:	Wokha	**Temperature**	:	5 °C to 25 °C
Coordinates	:	26° 13' 45" N, 94° 17' 51" E	**Biogeographic Zone**	:	Northeast
Ownership	:	Community State	**Habitats**	:	Sub-tropical Broadleaf Hill Forest, Tropical Secondary Scrub, Freshwater Wetland.
Area	:	?? ha			

IBA CRITERIA : A4 iv (Site known or thought to exceed thresholds set for migratory species at bottleneck sites)

PROTECTION STATUS : Not officially protected.



GENERAL DESCRIPTION

Doyang Reservoir was created by the construction of a dam for Doyang Hydro Electric Project in Wokha district of Nagaland. Doyang is a rockfill dam and hydroelectric project with a design capacity of 75 MW, on the Doyang river, a tributary of Brahmaputra. The power plant is run by the North Eastern Electric Power Corporation (NEEPCO). The reservoir is surrounded by forest on all sides. The forest is home to many species of birds and is the stop-over site of the migratory Amur Falcon *Falco amurensis* which pass through the area during their journey from their east Asian breeding grounds to the wintering grounds in Africa.

Doyang Reservoir is situated 26 km from the Wokha district headquarters. The other nearby cities are Mokokchung (Nagaland), Golaghat (Assam), and Kohima (Nagaland).

Doyang reservoir and the surrounding Pangti forest easily qualifies for the A4iv IBA criteria which is applicable to sites known or thought to exceed thresholds set for migratory species at bottleneck sites (Kasambe 2014). Doyang is a bottleneck site for feeding and resting of more than a million Amur Falcons during their migration.

AVIFAUNA

Rohit Chakravarty sighted 39 species of birds during observations in the area around Doyang on October 15 and 18, 2014 (www.ebird.org as accessed on April 2, 2015). These included species like Speckled Piculet *Picumnus innominatus*, Lesser Racket-tailed Drongo *Dicrurus remifer*, Black-crested

Bulbul *Pycnonotus melanicterus*, Yellow-browed Warbler *Phylloscopus inornatus*, Rufescent Prinia *Prinia rufescens*, Pin-striped Tit-babbler *Mixornis gularis*, White-browed Scimitar-babbler *Pomatorhinus schisticeps*, Brown-cheeked Fulvetta *Alcippe poiocephala*, Scarlet-backed Flowerpecker *Dicaeum cruentatum*, Little Spiderhunter *Arachnothera longirostra*, Blue-throated Barbet *Megalaima asiatica*, Common Kestrel *Falco tinnunculus*, and Crested Goshawk *Accipiter trivirgatus*.

BIOME 8: SINO-HIMALAYAN SUBTROPICAL FOREST

Blue-throated Barbet *Megalaima asiatica*

Population Estimation of Amur Falcons around Doyang Reservoir

A team of naturalists, namely Ramki Sreenivasan, Shashank Dalvi, Bano Haralu, and Rokohebi Kuotsu visited Doyang Reservoir and forests around Pangti, Ashaa and Sungro villages in October, 2012 and brought to light the issue of massacre of Amur Falcons. They estimated that during the peak migration, 12,000–14,000 falcons were being hunted in the area for consumption and commercial sale every day. They also estimated that 120,000–140,000 birds were being slaughtered in Nagaland every year during their passage through the state (www.conservationindia.org, accessed on May 30, 2014).

Amur Falcons breed in east Asia from Transbaikalia, Amurland, and northern Mongolian region to parts of North Korea. They migrate on a broad front through India, sometimes further east over Thailand and Cambodia, and then over the Arabian Sea to reach southern Africa.

Approximately a million Amur Falcons pass through the Pangti valley during their migration, and hence the site easily qualifies as an IBA under the Global IBA criteria A4iv. The global population of the species is estimated to be 1,000,000 birds (BirdLife International 2014).

In October, 2013, the number of Amur Falcons passing through Wokha district on migration was estimated at more than a million birds.

Satellite studies on the migration route of Amur Falcons

Three Amur Falcons were satellite tagged by scientists of BirdLife Hungary with the help of Wildlife Institute of India, and released on November 6, 2013 near Pangti village. The birds were named Naga, Wokha, and Pangti. All three birds were fitted with satellite tags with antenna and solar panel weighing 5 gm on their back. The satellite tagging was an initiative of the Union Ministry of Environment and Forests (MoEF), Wildlife Institute of India (WII), Convention on Migratory Species Office (CMS), United Nations Environment Programme (UNEP), and the Nagaland Forest Department.

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Doyang Reservoir and the surrounding forest was brought to limelight in 2012 by *Conservation-India*

The migration route of the tagged birds can be monitored from http://www.satellitetracking.eu website. All the three tagged Amur Falcons travelled across countries and continents to the African continent, spent the winter in Africa, and returned using nearly the same route to their breeding grounds in east Asia. They travel up to 22,000 km on each round trip. One of the tagged falcons flew 14,560 km, including a 5-day non-stop journey of 5,912 km at 50 km/hour, as it flew to Mongolia from Newcastle (South Africa).

LAND USE

- Freshwater reservoir
- Forest
- Cultivation

THREATS AND CONSERVATIONS ISSUES

- Hunting
- Cultivation
- Firewood collection

Intensive campaign by NGOs, local people and the government help in halting killing of Amur Falcon from 2013 onwards. The role of forest department and local peopole is commendable

More than a million Amur Falcon pass through this IBA. Therefore it qualifies for A4iv: IBA criterion. This is one of the few sites of in India that qualify for this global IBA criterion

ASAD R. RAHMANI

With the support of BirdLife International, BNHS took initiative with Nagaland Wildlife and Biodiversity Conservation Trust to initiate Eco establish ECO clubs in schools. Wildlife Trust of India and Natural Nagas are also playing active role in environmental awareness

Conservation action taken

Here is a summary of the action taken for the conservation of Amur Falcons (from Conservation India website, accessed on May 30, 2014):

Various conservation initiatives have been made in Nagaland. The Forest Department and Government of Nagaland are involved in all the initiatives to end the killing of Amur Falcons. BNHS and other NGOs came up with a two-year plan for vigilance and enabling mindset change among communities in Nagaland and Assam (Sinha, 2013).

1. Amur Falcon is a protected bird under the Indian Wildlife (Protection) Act, 1972 and Convention of Migratory Species, of which India is a signatory. It is listed as a species of Least Concern by IUCN.
2. The Nagaland Wildlife & Biodiversity Conservation Trust (NWBCT), a Dimapur-based NGO, led a campaign with the support of the government as well as leading conservation NGOs. They have been in touch with various government officials as well as community members since October, 2012 on ways to stop the killings in 2013.
3. NWBCT started a 'Friends of the Amur Falcon' campaign with a conservation education programme covering the important villages in Wokha district. Responding to NWBCT's advocacy campaign, Church leaders and village councils also appealed to villagers not to hunt the falcons.
4. Dr. Asad Rahmani (Director, BNHS) called Mrs. Jayanthi Natarajan, then Minister for Environment & Forests, Govt of India, who personally intervened and the Forest Department and district administration swung into action. The result was that nets were destroyed, captured birds were released, the sale of falcons was stopped, and arrests were made (http://www.birdlife.org, accessed on May 30, 2014).
5. The Chief Minister of Nagaland Mr. Neiphiu Rio expressed the State Government's commitment to end the killings of the migratory Amur Falcons while they are passing through Nagaland. He mentioned that it was the state's duty to protect the Amur Falcons and, in true Naga tradition of hospitality, treat them as honoured and esteemed guests. This message was spread to nearby villages by the Forest Department through a publicity campaign. Bombay Natural History Society (BNHS) supported the conservation of Amur Falcons, which are our guests, as migratory birds. BNHS wrote to Mrs. Jayanthi Natarajan, then Minister for Environment and Forests, Government of India.
6. Other NGOs like Wildlife Trust of India (WTI) and Natural Nagas have also been active in drawing up innovative initiatives to help prevent hunting of the Amur Falcons. According to Steve Odyuo, Chairman of Natural Nagas, a series of awareness campaign involving the Church, students, and village councils

have so far been undertaken with very positive results. A one-day awareness campaign on Conservation of Amur Falcons was organized on October 11, 2013 by the Pangti village council, supported by WTI, Natural Nagas, and the Forest Department of forest.

7. The awareness campaign, which was targeted at all the age groups of the village, included various events like screening of wildlife films, illustrated talks on the activities of the WTI, Natural Nagas, and the Forest Department, distribution of pamphlets, performances by singers from Wokha and Kohima, putting up posters in and around the Amur Falcon feeding areas, getting feedback from the affected people. All the neighboring villages were invited to participate in the campaign.
8. Sungro Range Youth Welfare Organization (SRYWO), in collaboration with the Department of Forests, Government of Nagaland, organized an awareness programme on 'Conservation and safe passage of Amur falcons in Nagaland' on October 5, 2013 at Ashaa Village, DHEP Wokha.
9. On October 30, 2013 (and during the entire migration period of Amur Falcons), it was reported that there had been absolutely no killings of Amur Falcons. This remarkable outcome was the result of a full year of painstaking efforts by the Nagaland government (especially the Forest Department), many NGOs, and most importantly, the local communities, who were determined to end the killings.
10. The campaign is supported by conservation institutions like Wildlife Conservation Society, Birdlife International, Raptor Research and Conservation Foundation, and Wildlife Conservation Trust.

A conservation success story

As a result of the various campaigns, vigilance, patrolling and the cooperation and initiative of the people of Nagaland, and an active Forest Department, not a single Amur Falcon was trapped during the 2013 autumn migration (Sinha 2013). Attitudes have changed so much in the space of a single year that the Amur Falcons are now treated, in the words of Nagaland's Chief Minister, as "esteemed guests". Even in winter 2014, these migrants were not hunted, and had a safe passage through Nagaland.

Nagaland Forest Department and Pangti village community were jointly awarded the Balipara Foundation Annual (BFA) Award 2014, at the ITA Machkhowa, Guwahati, Assam on November 7, 2014. The award is given to a government or non-government organization for their contribution to the protection of wildlife and their habitats (http://www.nagalandpost.com, accessed on April 2, 2015).

KEY CONTRIBUTORS

Banu Haralu, Zuthanglo Patton, Ramki Sreenivasan, Neha Sinha, Asad R. Rahmani, Shashank Dalvi, Rohit Chakravarty and Raju Kasambe.

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